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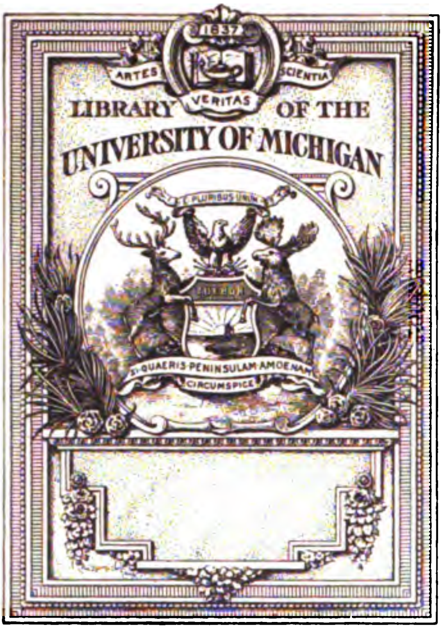
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ANNUAL REPORTS

OF THE

PRESIDENT AND TREASURER

OF

From

HARVARD COLLEGE

Feb. 23, 1894

1892–93

CAMBRIDGE
Published by the University
1894

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PRESIDENT'S REPORT FOR 1892-93.

To the Board of Overseers: —

The President of the University has the honor to submit the following Report for the academic year 1892–93; namely, from September 29th, 1892, to September 28th, 1893: —

Frederick Lothrop Ames, a fellow of the Corporation since 1888, died on the 12th of September, 1893, in the fifty-ninth year of his age. His knowledge of investments suitable for University funds, his experience in the management of charitable trusts, and his firm faith in the benefits of thorough education both for the individual and the community made him a very useful member of the Board. He manifested his attachment to the University, not only by rendering service, but also by making many and various gifts, — particularly to the departments of botany, horticulture, and arboriculture, subjects in which he had a strong personal interest. At the time of his sudden death, he had been for eight months in frequent consultation with the Librarian and an architect on the plans and specifications of a large reading-room which he proposed to add to Gore Hall. This unfulfilled purpose testifies to Mr. Ames's sagacity and foresight in University administration. He saw clearly that an ample, well-arranged, and liberally administered library was the most vital organ of University life.

Andrew Preston Peabody, Plummer Professor of Christian Morals, *Emeritus*, and a member of the Board of Overseers, died in Cambridge on the 10th of March, 1893, in the eighty-second year of his age. Dr. Peabody's first connection with the University after his graduation at the College in 1826, and at the Divinity School in 1832, was as tutor in mathematics and instructor in Hebrew for the academic year 1832–33. His next service was as Plummer Professor from 1860–1881, and his last as an Overseer from 1883 till his death. During his service as Plummer Professor he was twice acting-President — namely, in 1862 and in 1868–69.

In looking back on his long and honorable career, it clearly appears that the great service which he rendered to the University was in so conducting the services of Appleton Chapel for twenty-one years that, when he retired from the Plummer Professorship, it was natural and easy that he should be succeeded, not by a single preacher, but by a Board of Preachers of different denominations. His religious opinions and the whole spirit of his professional labors and of his life commended him to various denominations of Christians. He was welcome in the pulpits of many denominations, and by exchanges he brought ministers of different creeds into the College pulpit. His whole administration of the College Chapel broadened the foundations of the religious work of the University. The temper of his mind was constructive, affirmative, and comprehensive; and his daily walk and conversation commanded the respect and affection of all sorts of men. When he began his ministrations in the College Chapel, it was occupied on Sundays by what was practically a small Unitarian church, consisting partly of members of the University, and partly of other residents of Cambridge; and at morning prayers the attendance of the students was compulsory. When he resigned, the only policy with regard to Appleton Chapel, consistent with the work Dr. Peabody had done there, was to make it the centre of religious activities embracing all denominations and the whole University, and to abandon the compulsory attendance of students at religious exercises. It is unnecessary to say, therefore, that Dr. Peabody was warmly in favor of the changes in the administration of Appleton Chapel which ensued upon his retirement from the Plummer Professorship. The existence of a distinct church occupying the College Chapel, and connected with the Unitarian denomination, covers a period of sixty-seven years — namely, from 1814 to 1881; but during the last twenty-one years of this period Dr. Peabody was preparing the way for a more comprehensive policy.

Dr. Peabody's intellectual interests had a wide range — they embraced many departments of scholarship, many sociological inquiries, and many humanitarian enterprises. His industry and productiveness were astonishing, and were as conspicuous in the last twelve years of his life, after his retirement from his professorship, as at any earlier period. As a College teacher his influence was chiefly that of a shining example of kindliness, rectitude, and universal good-will. The successive generations of young men who contemplated him in the Chapel and the lecture-room conceived for him an affectionate veneration which remained as a tradition in the College for years after he ceased to teach and preach. The students underrated his shrewdness and sagacity — they could not overrate the sweetness and gentleness of his character and life.

Dr. Charles Pratt Strong, A.B. 1876, M.D. 1881, Assistant in Gynaecology since 1887, died on the 14th of March, 1893, after six years of assiduous and successful service in a difficult department of medical instruction. He was a thorough student and teacher, a bold and skilful surgeon, and a practitioner devoted to his patients and his profession.

Henry Eliason Seaton, who was appointed Curator of the Herbarium in 1892–93, died suddenly at Cambridge on the 30th of April, 1893, in the twenty-fifth year of his age. He was a young man of high character and large promise, and his early death was a loss both to the University and to botanical science.

Professor David Williams Cheever resigned the Professorship of Surgery from the 1st of September, 1893. Dr. Cheever was Demonstrator of Anatomy from 1861 to 1868, Adjunct Professor of Clinical Surgery from 1868 to 1875, Professor of Clinical Surgery from 1875 to 1882, and Professor of Surgery from 1882 to 1893, his period of service in the Medical School covering therefore thirty-two years. The Governing Boards of the University and the medical profession had long recognized Dr. Cheever's consummate knowledge, judgment and skill as a surgeon, and his rare powers of clear, concise, and simple exposition. He was also a wise and faithful member of the Medical Faculty. In recognition of his great services to the Medical School, the Governing Boards elected him Professor of Surgery, *Emeritus*.

Dr. Lyman Abbott retired from the Board of Preachers after four years of devoted and efficient service. He was the first Preacher to be elected who was not a graduate of Harvard

University; but such were his devotion and efficiency, that the Governing Boards have never hesitated since his first year of service to choose as Preachers men who were educated in other institutions. At the present moment, not a single one of the five Preachers is a graduate of Harvard University.

The Statutes of the University were amended in several particulars during the year 1892–93. In the first statute, which is an enumeration of the departments comprehended in Harvard University, "The Arnold Arboretum" was inserted as a distinct department after the Bussey Institution.

In the fourth statute, on tenures of office, there were inserted after the words, "Proctors are appointed," the words "for not more than one year," and after the word "order" the words "and decorum." This change in the definition of the tenure of proctors was made in order to conform to what had been found a convenient practice — namely, the practice of appointing proctors for only one year instead of an indefinite term.

The thirteenth statute, on the Parietal Committee, was amended so as to make the Parietal Board a University body instead of a College body.

The fourteenth statute, on the Registrar, was stricken out, and in its place the following statute on the Regent was adopted: —

> The Regent is a University officer who exercises a general supervision over the conduct and welfare of the students. It is his duty to direct the proctors who reside in University buildings, or in buildings to which the superintendence of the University extends. He is expected to inform himself of the condition and management of all buildings in which five or more students are lodged, or in which students' societies meet. He is also expected to inform himself fully about all students' societies and clubs, and to enforce the responsibility of the officers and members thereof for their proceedings.

Although the first draught of this statute was adopted by the Corporation November 14th, 1892, and was laid before the Board of Overseers on November 16th, it was not adopted in its final form by both Boards until December, 1893, the phraseology of the statute having given rise to discussion. It will be perceived that the Regent is a University officer, and that his duties are different in kind from those of any University official in the past. The functions of the Regent have proved to be very useful, and it seems probable that with the growth of the University it will be found desirable to add to the supervision which the Regent exercises, some sort of sanitary and medical inspection.

Between statutes fourteen and fifteen a new statute on the University Preachers was inserted in order to make that Board a part of the permanent organization of the University. The Preachers to the University were originally appointed under a vote which was passed by the President and Fellows on the 10th of May, 1886, and was concurred in by the Overseers on the 12th of May. After an experience of six years both boards were ready to incorporate the provision on this subject in the statutes.

The last statute, relating to the Library, was divided into two parts — the first part relating to the Library and the duties of the Librarian, and the last part relating to the Council of the Library. This was a change of form, but not of substance. In this revision of the statutes certain headings, which either were superfluous or were remnants of a classification become obsolete, were stricken out.

One of the most interesting phenomena in the University during the past few years has been the sudden and rapid growth of the Scientific School. It has to-day twenty times as many students as it had seven years ago (in 1886–87, 14; in 1893–94, 280). This growth, if continued for a few years, will soon bring Harvard University to a condition resembling that of other large universities in the United States in which the department or departments giving degrees in pure and applied science hold an important place in comparison with the department which gives the degree of Bachelor of Arts. At Harvard the original degree of Bachelor of Arts has always held a preëminent place. The accompanying table shows for six important institutions the relative numbers registered for eight years past in the departments which give the degree of A.B. and in those which confer a degree or several degrees in

		1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
UNIVERSITY OF MICHIGAN.	Students studying for the degree of A.B.	170	176	174	166	195	232	259	255
	Students studying for the degree of L.B., S.B., or Ph.B.	306	364	389	463	580	680	763	876
	A.B. degrees conferred	50	43	55	35	51	55	62	73
	L.B., S.B. and Ph.B. degrees conferred	43	54	71	70	83	94	105	152
YALE UNIVERSITY.	Students studying for the degree of A.B.	563	570	614	688	736	832	888	966
	Students studying for the degree of Ph.B.	243	273	285	300	336	374	451	516
	A.B. degrees conferred	135	152	119	123	148	185	182	176
	Ph.B. degrees conferred	62	57	81	72	64	89	102	109
CORNELL UNIVERSITY.	Students studying for the degree of A.B.	28	45	60	83	111	124	139	139
	Students studying for the degree of Ph.B., L.B., S.B., C.E., or M.E.	468	562	633	746	849	890	981	1049
	A.B. degrees conferred	7	8	14	11	20	23	35	39
	Ph B., L.B., S.B., C.E., and M.E. degrees conferred	78	83	114	109	167	164	208	213
UNIVERSITY OF PENNSYLVANIA.	Students studying for the degree of A.B.	105	110	91	109	120	105	89	100
	Students studying for the degree of Ph B., S.B., or Mus.Bac.	198	170	139	218	293	357	248	282
	A.B. degrees conferred	25	34	21	18	22	13	15	22
	Ph.B., S.B., and Mus. Bac. degrees conferred	60	60	24	38	27	26	44	60
COLUMBIA COLLEGE.	Students studying for the degree of A.B. in the School of Arts	247	257	233	237	269	231	246	262
	Students studying for the degree of M.E., C.E., or Ph. B., in the School of Mines	236	264	228	229	231	242	277	337
	A.B. degrees conferred on students in various departments	64	52	49	38	43	50	37	69
	M.E., C.E., and Ph.B. degrees conferred on students in various departments	37	59	47	52	54	39	45	38
COLLEGE OF NEW JERSEY.	Students studying for the degree of A.B.	342	353	398	422	455	504	559	600
	Students studying for the degree of E.E., S.B., or C.E.	76	80	76	92	110	155	223	281
	A.B. degrees conferred	95	73	91	79	108	118	126	113
	E.E., S.B., and C.E. degrees conferred	8	12	8	17	24	10	22	20

pure and applied science. In this table all special, optional, irregular, post-senior, and other students who are not strictly candidates for primary degrees have been omitted. It appears that in the University of Michigan the candidates for degrees in science have surpassed in number the candidates for the degree of Bachelor of Arts since the year 1887–88, and that this excess is rapidly mounting. At the same university the annual number of persons receiving the degree of A.B. has been smaller than the number of persons receiving the degree of B.S., B.L., and Ph.B. since 1886–87. At Cornell University the number of persons who are candidates for the degree of A.B. has always been very much smaller than the number who are seeking degrees in applied science; and the annual number of persons actually receiving the degree of A.B. has always been a small fraction of the number of those receiving the degrees in science. At the University of Pennsylvania the number of candidates for the degree of A.B. has rather diminished than increased during the past eight years, while the number of candidates for the degrees in science has decidedly increased. The number of persons annually receiving the degree of A.B. at the University of Pennsylvania has actually diminished during the last eight years, and is surpassed in every year within the table by the number annually receiving the degrees of Bachelor of Philosophy, Bachelor of Science, and Bachelor of Music. At Columbia College the A.B. has held its own rather better, and may be said to stand approximately on an equality with the degrees in science, so far as the number of candidates for the degree and the number of persons actually receiving it are concerned. At Yale University, the Sheffield Scientific School, which confers the degree of Ph.B., has developed more rapidly than the College, although its course is but three years long; and the number of persons annually receiving the Ph.B. is increasing absolutely, and also relatively to the number receiving the A.B. At Princeton the Scientific Department is comparatively new (the John C. Greene School of Science was established in 1873); but, whereas in the three years 1885–1888 the number of students registered in the Scientific Department was from one fifth to one fourth of the number registered in the College, in the years 1889–1892 the

Scientific Department had from one fourth to more than one third the numbers of the College, and in 1892–93 it had almost one half. The number of graduates in science at Princeton is still less than one fifth of the number receiving the A.B.; but in a few years the proportion of the scientific graduates must rise considerably, because of the large number of students who register in the School of Science. In the new state universities, which have been founded on the general plan of the University of Michigan, the predominance of the scientific courses and the scientific degrees is quite as decided as it is in the University of Michigan.

To get a complete view of the great change in the position of the A.B. in the United States it is further necessary to observe that the numerous schools of applied science, or technology, which are not connected with universities, have thriven during the past twenty-five years, and that none of them give the degree of A.B.

At Harvard University this movement, so general throughout the country, has not been seriously felt, partly because of the languid condition of the Lawrence Scientific School from the Civil War down to 1886–87; and partly because of the early development of the elective system in Harvard College, for under that system scientific studies could be counted without restriction or drawback for the degree of Bachelor of Arts.

There are two principal reasons why the degrees in applied science are now sought more than the degree of A.B. In the first place, all over the country, in universities as well as in schools of technology or applied science, the requirements for admission to candidacy for degrees in science are decidedly lower than the requirements for admission to candidacy for the degree of A.B. In the second place, a young man who has completed a course leading to a degree in applied science has received a training which enables him to get a living more quickly than the ordinary Bachelor of Arts. In most cases the Bachelor of Arts, unless he go into business, must go through a professional school, or must take a higher degree in Arts in order to fit himself to be a teacher; and consequently he will not be ready to earn his living for two years at least after he graduates from his college, and in most cases for three or four years after his graduation in Arts. One other reason often affects the minds of parents, and of young men who are deciding on a place of education, or on a course of study in a given university. As a rule, there is more of the spirit of hard work in the scientific schools or courses, than in the colleges or the college departments of universities. The motive of earning a livelihood presses more constantly, and the students feel more distinctly that they are beginning their life work, and that their future success may be determined by their present acquirements and the habits of work which they form. On the other hand, waste of time in sports, social enjoyments, and desultory reading is, by custom, tolerated more in colleges than in technical schools.

The degrees in science are rapidly winnning their way to public consideration and the respect of educated men. Thus, it is the practice in the higher departments of Harvard University to put primary degrees in Science in many respects on the same footing with the degree of Bachelor of Arts. For example, the degrees of Bachelor of Literature, Bachelor of Philosophy, and Bachelor of Science admit to the Law School and to the Medical School without examination, just as well as the degree of Bachelor of Arts. The Graduate School admits freely as candidates for appropriate degrees, both graduates of colleges and graduates of scientific schools in good standing; and it is to be observed that the holders of these newer degrees win valuable appointments in larger proportion than their number would entitle them to. Thus, of nineteen appointments to fellowships made during the current academic year in the Graduate School, five are persons whose first degree was not Bachelor of Arts.

The Lawrence Scientific School at Harvard, and the Sheffield Scientific School at Yale, were the earliest scientific departments to be established in American universities, and only one technical school ante-dates them, — namely, the Troy Polytechnic Institute, which has always been specifically a school of engineering. Harvard gave its degree of S.B. for the first time in 1851; and Yale first gave its degree of Ph.B. in 1852. The whole development of the new degrees in science, philosophy, or literature in the United States has therefore taken place within forty-three years; and in that time these degrees have won popular favor as well as full recognition in the oldest and most conservative universities in the country.

The position of the A.B. degree has been gravely affected by these changes; and it is now threatened from two other quarters. A great improvement having taken place in secondary education in the United States since the Civil War, and the average age of pupils on graduating from good secondary schools having risen to eighteen or even nineteen years, the secondary schools complete the education of a larger and larger proportion of their pupils. On the other side of the old-fashioned college, the professional schools are demanding longer and longer periods of study; and this demand, coupled with the improvement in the secondary schools, makes it more and more natural — and for young men of small means even necessary — to go direct from secondary schools to professional schools. In the meantime, the greater number of the friends of the traditional degree of Bachelor of Arts are endeavoring to maintain a four years' course for that degree between the secondary schools which graduate their pupils at eighteen or nineteen and the professional schools which desire to retain their pupils three or even four years. To other friends of the degree of Bachelor of Arts, this policy, under existing conditions, seems extremely imprudent, there being no other country in the world which has ever attempted to maintain a four years' course for the degree of Bachelor of Arts in such a relation on the one hand to the lower, and on the other to the higher institutions of education.

From the college or university point of view, athletic sports are to be promoted either as wholesome pleasures which do not interfere with work, or as means of maintaining healthy and vigorous bodies in serviceable condition for the intellectual and moral life. With athletics considered as an end in themselves, pursued either for pecuniary profit or for popular applause, a college or university has nothing to do. Neither is it an appropriate function for a college or university to provide periodical entertainments during term-time for multitudes of people who are not students.

On examining in the light of these principles the various athletic sports pursued at the University, it clearly appears that most of them are not only unobjectionable but positively serviceable. Tennis, rowing as provided by the Weld Club, shooting, hare and hounds, bicycling, bowling, and the class-work at the Gymnasium, enlist hundreds of students in interesting sports on which there are no serious drawbacks. The various sports called track athletics are also useful, because of the large number of students who take part in them. In the spring of 1893 three hundred and twenty students were in training for track athletics, of whom one hundred and eighty-four passed the required examination, and participated in some of the various trials. Of these one hundred and eighty-four only thirty-five ultimately took part in the intercollegiate games at New York in May. Track athletics are not too absorbing or exacting to permit the steady pursuit of the main end of college life, — hard study; and they involve no sacrifice of personal independence or personal dignity.

In the highly competitive sports which give rise to exciting intercollegiate contests, namely, boat-racing, base-ball, and foot-ball, there have been developed in recent years some evils of a serious nature. In the first place, the intercollegiate contests have made competition so keen, that the time devoted to these sports by the principal crews and teams is excessive. No sport which requires of the players more than two hours a day during term-time is fit for college uses. In vacation, a student, like his elders, may wisely give his whole time, for a few weeks to manly sports in the open air, especially to recreations which involve an intimacy with nature; but in term-time two hours a day should be the outside limit. In the three sports above mentioned, the training and the practice occupy too large a portion of the college year, and too many hours a day. No student can keep up his studies, and also play his full part in any one of these sports as at present conducted. The faithful member of a crew or team may, perhaps, manage to attend most of his lectures or other college exercises; but he rarely has any mind to give to his studies.

His nervous energy is exhausted, either by severe bodily exercise, or by the excitement of frequent contests. This evil, which is comparatively new, has rapidly increased within recent years. It is due to an exaggeration of training and practice, which is caused in turn by an extreme and irrational competition.

This exaggeration of the true function of athletic sports in a university is in itself a great evil; but other evils have accompanied the rapid development of interest in the highly competitive sports both within and without the University. The public interest in base-ball and foot-ball has made it easy to collect large sums of gate-money, both on college grounds and on public grounds convenient to New York and other cities. The money thus easily got is often wastefully and ineffectively spent. There is something exquisitely inappropriate in the extravagant expenditure on athletic sports at such institutions as Harvard and Yale — institutions which have been painfully built up by the self-denial, frugality, and public spirit of generations that certainly did not lack physical and moral courage, endurance, and toughness, yet always put the things of the spirit above the things of sense. At these universities there must be constant economy and inadequacy in expenditure for intellectual and spiritual objects; how repulsive then must be foolish and pernicious expenditures on sports.

Again, an unwholesome desire for victory, by whatever means, in intercollegiate foot-ball has perverted the judgment of the players and the college public concerning the propriety of "tricks," surprises, and habitual violations of the rules of the game as means of winning a victory. In war, stratagems and surprises are consistent parts of that supreme savagery; but in manly sports new "tricks" practiced in secret, sudden novelties, and undetected violations of the rules should cloud the joy of victory, and aggravate the mortification of defeat.

Finally, in the game of foot-ball, which at present interests the public more than any other, the same eagerness for victory by whatever means has during the last five years added to the risk of bodily injury incurred by the players. The players have been forced by public opinion, and the immediate pressure of young graduates employed as coaches, to overtrain and overwork; so that they are subjected for weeks to a severe nervous strain, and are brought to arduous contests, not as the public has supposed, in the highest physical condition, but in an over-wrought and even morbid state, from which the return to normal life is difficult. In other manly sports in which courage, presence of mind, and promptness of decision are to be cultivated, such as sailing, riding, climbing mountains, hunting, and the like, the risk of personal injury is always studiously reduced to lowest terms, and the sportsman who takes unnecessary risks is regarded as foolhardy or incompetent; but in foot-ball, the recent development of the game has made it more and more dangerous, without making it more skilful or more interesting. The danger to life in this country is not yet great, though increasing; but the exposure to a class of injuries which diminish the serviceableness of the body throughout life has decidedly increased. Such injuries are sprains, wrenches, congestions of the brain, the breaking of bones, the loss of teeth, and the enlargement or stiffening of joints. It should be said, however, that the injuries sustained by foot-ball players are always incidental and non-essential; whereas in prize-fighting — with which foot-ball has been unjustly compared — the victory of one combatant is only to be obtained by the severe bodily injury of the other. Moreover, it should be distinctly understood that the objection to foot-ball in this regard is, not that it involves some risk, but that its risks are inordinate or excessive. In every manly sport there is some risk of life and limb.

In view of the drawbacks which have attended, or may hereafter attend, the sports which are stimulated by inter-collegiate contests, it becomes an interesting question how large the proportion of students is who take active part in these games. In the year under review, four hundred and four persons were examined and passed as fit to take part in the following competitive games — track athletics, base-ball, boat-racing, and foot-ball — the total number for each sport being as follows: —

For Track Athletics	184
" Base-ball	81
" Boat-racing	48
" Foot-ball	167
Total	480

There were, however, but four hundred and four separate persons who were passed as competent for these games. They were divided among the different sports as follows: —

For Track Athletics alone	150
" Base-ball alone	59
" Boat-racing alone	22
" Foot-ball alone	105
" Track Athletics and Foot-ball	20
" Track Athletics and Boat-racing	2
" Track Athletics and Base-ball	4
" Boat-racing and Foot-ball	20
" Base-ball and Foot-ball	14
" Track Athletics, Boat-racing, and Foot-ball	4
" Track Athletics, Base-ball, and Foot-ball	4
Total	404

There were sixty-eight students who passed examination for more than one of these competitive sports, and entered upon them, sixty for two sports, and eight for three; and all these gave up more than half of their year to sports, unless indeed they were by good fortune excluded from the crews or teams early in the season of the respective sports. Yet the number of persons who arrive at the final competitive event in any one of these sports is comparatively small. Far the greater number of those who attempt to win places on the best crews or teams fail in their effort. Thus, out of one hundred and sixty-seven men who were permitted to play foot-ball, not more than sixty really finished the season. The rest demonstrated in some way their unfitness for the game, or suffered such injuries that they could not play. In foot-ball, the majority of the young men who attempt the game in October are disabled, or rejected for cause, during the first six weeks of the term. The first and second elevens are kept on the field for practice, and each eleven has from five to ten substitutes in readiness, making about forty persons in active play during the practice season, besides a moderate number of additional persons connected with the four class elevens; but only about twenty men are made ready for the final games. In base-ball, even a smaller number of men are used in the chief competitions. The University crew of eight men seldom has more than four substitutes. Although one hundred and eighty-four men were permitted after examination to take part in track athletics, only thirty-five men went to New York for the final contests last May, as has been already mentioned. It is obvious, therefore, that the percentage of the whole number of students in the University who really take part in the ultimate events in each sport is a small one. About eighty persons were finally drawn into the chief contests in these four competitive sports from a university which numbered in the year 1892–93 two thousand, nine hundred and sixty-six students. Moreover, as appears in the table above given, some of these eighty men took part in more than one sport. Including substitutes, therefore, less than three per cent of the whole body of students in the University took part, at the end, in the principal matches in these four competitive sports.

The evils which result from the prevailing exaggeration of training and practice for boat-racing, base-ball, and foot-ball — it has already been stated that this evil exists to only a slight degree in track athletics — are therefore confined to a small percentage of the students. On the other hand — it is fair to say — the usefulness of these sports, considered as out-of-door gymnastics, is not confined to the men who actually take part in the games after passing examination. It has already been pointed out that many students "train" for track athletics who never participate in matches. In the same way, there are many so-called "scrub nines" for playing base-ball, and there are class crews and "scratch" races on the river. Foot-ball as played during the past five years is the least useful of the games as a promoter of open-air physical exercise in general among grown men, for the simple reason that this rough and intense game is out of the question for the great majority of students. It is a safer game for boys than for men. As a matter of fact, not six per cent. of the whole body of students have passed the required examination, and got a permit to play. In all probability there are some fit students who have no desire to play the game; but on the other hand the majority of those who receive a permit turn out not to be well qualified for the game played at high pressure. The game played in a reasonable way is an excellent one for securing an all-round development of the body.

Another interesting inquiry in regard to the highly competitive games relates to the extent to which the different departments of the University are represented among the players. Do they interest the older students or the younger, the advanced departments or the elementary? The following table shows the distribution of the men who passed examinations for the four principal games in the year 1892–93.

	Foot-ball.	Base-ball.	Boat-racing.	Track Athletics.	Total.
First year Graduate School				4	4
First year Law School	3	4		5	12
Second year Law School	1	2		3	6
Third year Law School		2		3	5
Special Law Students	2			3	5
Third year Divinity School				1	1
Special Divinity Student				1	1
First year Medical School	1	3		2	6
Second year Medical School	1			2	3
First year Scientific School	1	1	1	3	6
Second year Scientific School		3	1	2	6
Fourth year Scientific School		1			1
Special Scientific Students	2	2	1	7	12
First year College (Freshmen)	28	13	7	50	98
Second year College	29	14	9	40	92
Third year College	22	11	11	27	71
Fourth year College	12	15	10	20	57
Special College Students	1	2	1	10	14
Record obscure	2		1	1	4
	105	73	42	184	404

In constructing this table, in which no individual could appear more than once, all the persons who participated in track athletics were entered under that head; under boat-racing were entered all those who passed the examination for boat-racing except the six who also practised track athletics; under base-ball were entered all who obtained the permit for that game except the eight who also held a permit for track-athletics; and under foot-ball were entered those who held the permit for foot-ball alone. This table should be compared with the tables on pp. 15 and 16; for it does not give the real number of permits issued for any sport except track athletics.

It will be seen that the Freshman and Sophomore classes of the College with the special College students supply more than half of the entire number; that the Law School has as many players in these games as the Graduate, Divinity, Medical, and Scientific Schools put together, if the special scientific students, who are mostly first year men, be excluded; and that the College and Scientific School — the two most elementary departments of the University — taken together supply more than seven eighths of all the players. The total number of persons passed for all these competitive sports taken together was less than one seventh of the whole body of students; and of this seventh more than one half were persons who had been less than two years in the College or the Scientific School. From any serious educational point of view, therefore, the sports that give rise to the intercollegiate games are not of vital importance; for the great majority of the students cannot, or at any rate do not, participate in them, and are injured by them only if the general tone and atmosphere of the University are affected for the worse by an exaggerated interest in them either within or without the University. The next question to consider, therefore, is the effect of these sports on the general tone of an institution of learning.

The advantages which have resulted from the great development of athletic sports at the American colleges within the past twenty-five years may be briefly summarized as follows: They have infused into boys and young men a greater respect for bodily excellence and a desire to attain it; they have supplied a new and effective motive for resisting all sins which weaken or corrupt the body; they have quickened admiration for such manly qualities as courage, fortitude, and presence of mind in emergencies and under difficulties; they have cultivated in a few the habit of command, and in many the habit of quick obedience and intelligent subordination; and finally they have set before young men prizes and distinctions which are uncontaminated by any commercial value, and which no one can win who does not possess much patience, perseverance, and self-control in addition to rare bodily endowments.

The disadvantages of athletic sports in colleges are much more difficult to describe; because they are in the main the results of wanton exaggeration, and are not necessarily inherent in the sports themselves. When thus exaggerated, they interfere with, instead of clarifying and maintaining, mental activity; they convert the student into a powerful animal, and dull for the time his intellectual parts; they present the colleges to the public, educated and uneducated, as places of mere physical sport, and not of intellectual training; they make familiar to the student a coarse publicity which destroys his rightful privacy while in training for intellectual service, and subjects him to insolent and vulgar comments on his personal qualities; they induce in masses of spectators at interesting games an hysterical excitement which too many Americans enjoy, but which is evidence, not of physical strength and depth of passion, but of feebleness and shallowness; and they tend to dwarf mental and moral preëminence by unduly magnifying physical prowess. The game of foot-ball has other disadvantages peculiar to itself. Being a game which, like boxing and wrestling, involves violent encounters between the players, but in groups as well as in pairs, and being also a game played by heavy men who collide at speed, it affords the spectacle of exciting wrestlings, rushings, and collisions in rapid succession, with an inevitable result of bodily injuries in almost every well-contested match. Injured players are carried off the field, substitutes take their places, and the game goes on. Mere practice matches offer the same spectacle. The sensibilities both of the players and of habitual spectators are blunted by such sights. Moreover the players, even if they never lose their self-control and purposely inflict injuries on their opponents, — which, under the circumstances, is too much to expect, — must constantly take the risk of hurting them seriously. No other athletic sport used in colleges requires of the players this habitual disregard of the safety of opponents. In short, foot-ball cultivates strength and skill kept in play by all the combative instincts, whereas the strength most serviceable to civilized society is the strength which is associated with gentleness and courtesy. The senseless fury of intercollegiate competitions has unquestionably heightened these evils. To become brutal and brutalizing is the natural tendency of all sports which involve violent personal collision between the players, and the game of foot-ball is no exception to this rule. Actual battle in modern warfare gives comparatively little opportunity for this bodily encounter of combatants, for the enemy is scarcely seen. Against this unavoidable tendency of the game there is no defense except the enforcement of strict rules, analogous to those which have kept boxing a tolerated sport; but unfortunately it is much harder to enforce rules in foot-ball than in boxing, because of the number of combatants.

If the evils of athletic sports are mainly those of exaggeration and excess, it ought not to be impossible to point out and apply appropriate checks. The following changes would certainly diminish the existing evils: (1) There should be no Freshman intercollegiate matches or races; (2) no games, intercollegiate or other, should be played on any but college fields, belonging to one of the competitors, in college towns; (3) no professional student should take part in any intercollegiate contests; (4) no student should be a member of a University team or crew in more than one sport within the same year; (5) no foot-ball should be played until the rules are so amended as to diminish the number and the violence of the collisions between the players, and to provide for the enforcement of the rules; (6) intercollegiate contests in any one sport should not take place oftener than every other year. Finally, if trial shall prove the insufficiency of all these limitations, intercollegiate contests ought to be abolished altogether.

These suggestions are by no means of equal importance; some of them concern many persons, and some but few; but all or any of them could be put into force by a single college without diminishing that college's chances of success in such intercollegiate contests as it undertook.

Different persons will undoubtedly strike the balance differently between the advantages and disadvantages of athletic sports; but one important fact will for many people incline the balance in favor of the sports—the fact, namely, that there has been a decided improvement in the average health and strength of Harvard students during the past twenty-five years. The gain is visible in all sorts of students—among those who devote themselves to study, as well as among those who give much time to sports. In 1888 the Faculty passed a useful vote to the effect that all holders of scholarships were expected to present themselves twice every year to the Director of the Gymnasium for a physical examination. The Faculty passed this vote under the impression that the bodily condition of these hard students would be found to be unsatisfactory; but it has turned out that, though some were weak, others were strong, and that the development and condition of the larger number were fairly good.

The Dean of the Faculty of Arts and Sciences points out (p. 51) that the divisions and departments into which that Faculty is divided exercise a strong influence on the development and coördination of the courses of instruction; and that they are steadily gaining power over the methods of instruction and the use of assistants. They also bring the younger teachers into profitable association with the older. This organization of the Faculty into divisions and departments is, however, so recent, that their powers are not yet defined, either by law or by custom. It will probably take some years to determine the expedient limits of their authority.

The Dean discusses at length the condition of the Standing Votes of the Corporation and Overseers on the subject of the higher degrees in Arts, namely, the degrees of Master of Arts, Doctor of Philosophy, and Doctor of Science. He shows clearly that they require to be recast, and to be much reduced in length, large portions of them having been superseded, some by Statutes subsequently adopted, and others by later votes of the Corporation and Overseers. This subject was acted upon by the Faculty of Arts and Sciences and by the Corporation in the year under review; but the Board of Overseers has not yet consented to the action proposed by the Faculty. The discussion of the subject has raised a question as to the use of Standing Votes in distinction from Statutes. Both forms of enactment originate with the President and Fellows, and require the consent of the Board of Overseers. In the practice of the governing boards, it seems clear that Standing Votes are adopted concerning subjects which are either new, or affected by changing conditions, so that they do not seem to be fit matters for Statutes. The Statutes record the well-established usages of the University on fundamental matters, like tenures of office, faculties, the academic year, and degrees; Standing Votes have lately been found convenient on such subjects as the higher degrees when they were newly established, the Board of University Preachers when it was first created in 1886, and the Committee on the Regulation of Athletic Sports. After a time, the contents of a Standing Vote may be transferred to a Statute, if some of the dispositions made originally by the Standing Vote prove to have a permanent value. For example, the substance of the Standing Vote which established the Board of Preachers has lately been converted into a Statute, as has already been mentioned in this Report. On the whole, there seems to be a convenience in the use of Standing Votes rather than Statutes in regard to subjects which have not been wrought by experience into permanent form. Statutes need to be simple, comprehensive, and reasonably permanent, and they should relate only to the most fundamental topics; Standing Votes are convenient for dealing with new topics, or new forms of old topics; they may be changed from time to time without much ceremony, or circumspection, and have avowedly a provisional and temporary aspect.

When the present scheme of requirements for admission to Harvard College was adopted in 1886, it was understood that it should be tried for six years without material change. The results have shown that plan *b*, which requires the candidate to present all the elementary subjects except either German or French, and at least three advanced studies, is the plan most generally acceptable; and that plan *c*, which requires all the elementary subjects except Greek or Latin, and at least four advanced studies including advanced mathematics, is acceptable to a small but gradually increasing percentage of the whole number of candidates, namely, from three and a half per cent. (1888) to seven and a half per cent (1890) and seven per cent (1893). The unattractiveness of plan *c* is owing to several causes. In the first place, it requires advanced mathematics, and only very few boys have a taste for that subject; secondly, the time required to master the substitutes for Greek is decidedly longer than the time required for the Greek; and thirdly, the number of hours of examinations to be passed under plan *c*, namely seventeen, is larger than it is under plan *b* (sixteen) or plan *a* (fifteen). Perhaps for the reason that this mode of entrance is more difficult than the two common modes, it has turned out, as was shown in the last Report, that the persons who have thus far entered College without Greek win a standing which is, on the average, above that of those who enter with Greek. As a transitional arrangement, this plan has worked satisfactorily; but it may be doubted whether it can fairly be considered just and expedient as a permanent arrangement. The six years of trial having elapsed, the Faculty will probably proceed before long to reconsider the requirements for admission to College.

The Faculty took action, as reported by the Dean (p. 101) to raise the minimum standard of the A.B. degree. The grade of work of a College student in each of his courses is indicated by one of five letters — *A*, *B*, *C*, *D*, or *E* — *E* meaning failure. Up to and including the last Commencement, a Senior might graduate who had received the grade of *D* in one half of his college work. Late in the year 1892–93, the Faculty voted to require hereafter a grade higher than *D* in three fourths of a student's college work. The new minimum is about what custom, though not the Regulation, had prescribed; and it is the intention of the Faculty to raise the minimum still further. These changes are certainly in the right direction, for nobody doubts that at present the degree of Bachelor of Arts can be obtained in Harvard College, or in any other American, English, or Scotch college or university, by any young man of moderate parts with a small expenditure of force during not more than one half of each of the years of nominal residence. The recent experiences of the leading American colleges in regard to habitual athletes as candidates for the A.B. illustrate forcibly the truth of this proposition. To raise the official minimum standard for the college degree is therefore a much needed reform.

The remarks of the Dean of the College concerning the effects of Freshman foot-ball on college work (p. 102) are applicable to all intercollegiate Freshman matches. They are demoralizing to the individual; useless for the proper development of legitimate athletic sports in college; and peculiarly injurious because they tend to lower the standard of college work at the important epoch of transition from school to college, from a regime of study under observation to a regime of large liberty. Foot-ball is, of course, the most injurious of the sports to Freshmen, because it comes at the very opening of the year.

The students of the Lawrence Scientific School were catalogued in a new way in the year 1892–93. They were divided into groups by the main department of study, these groups corresponding to the seven four-years' groups, or courses, into which the studies of the School are divided. The special students, as well as the regular, were therefore divided among the departments by their principal topics respectively. This

University ; but they also have, in addition, two special laboratories of their own, one for electrical engineering, and one for physiology and physical training. The equipping of the two laboratories was continued during the year 1892–93, and they are now well provided with the means of teaching. Skilled mechanics are necessarily employed in both these laboratories beside the instructors and assistants.

It being evident from the correspondence of the year under review that a large addition to the number of students in Civil and Mechanical Engineering was to be expected for the year now current, the staff in Engineering was considerably enlarged. Assistant Professor Wait having asked leave of absence, one instructor was appointed in Drawing and Machine Design, and another in Surveying and Railroad Engineering, and three assistants were appointed with enlarged duties. The staff in the Engineering Department consists therefore of one professor, three instructors, and three assistants, beside the instructor in the Construction and Maintenance of Common Roads, and the instructor in Water Supply and Sanitary Engineering. The anticipated increase in the number of students took place, one hundred and twenty-one students being enrolled for the different branches of Engineering in the current year, against seventy-one in the preceding year.

There was also added to the instruction of the School a course in Architecture, which is intended to be the first of a series of courses extending through four years. To equip this course with necessary material for instruction a considerable appropriation has been made for use during the current academic year. The subject of this first course is the Development of Architectural Styles with special reference to Greek and Roman Architecture. The class has been furnished with a spacious and well-lighted drawing-room, and the instructor has an assistant for the supervision of the work in Drawing.

The Dean of the School states clearly (p. 106) the embarrassment which will shortly arise from the rapid increase in the number of students. A new building, to contain lecture-rooms, drawing-rooms, and collections will be imperatively needed next year, if the recent rate of gain in the number of students continues, as there is every reason to suppose. In hard times the scientific schools have this advantage over the colleges, that they provide more quickly the means of earning a livelihood.

The Dean of the Graduate School makes from year to year an interesting classification of the students in the School by the principal subjects to which the students are respectively devoted. It is interesting to observe that the three largest departments for two years past have been history and political science, natural history, and English and other modern languages. Classical philology, mathematics, and philosophy come next. In the Graduate School, as in the College, chemistry and physics are relatively neglected, in spite of the great importance of those sciences in the useful arts, and in spite of the ample equipment of the University for teaching them. The great majority of the students of the Graduate School are intending to be scholars and teachers, and the applications of knowledge have for them but a secondary interest.

The table by which the Dean shows the growth of the School during the last eight years (p. 110) exhibits also the increasing number of institutions which feed the School.

That portion of the Dean's report which relates to the selection of persons to hold fellowships and scholarships, and to the importance of these aids for students of the Graduate School, deserves the special attention of the Board of Overseers. This is a department of university administration which is full of difficulties and problems. On the one hand, it is urged that the majority of the young men who desire to study in the graduate schools of the leading American universities are poor, and are too old to be supported by their parents. Therefore, it is argued, complete support should be provided for them at the University. On the other hand, it is maintained with equal force that these young men are old enough to support themselves, and that they have already received a prolonged education, which should enable them to earn a livelihood and something more. The advocates of the latter view urge that fellowships and scholarships should be of moderate amount, in order that the holders may be obliged to provide in part for themselves by laying up money before they come to the University. The subject is complicated by the competition for graduate students among the different universities which maintain graduate schools. The number and the amount of fellowships vary at different institutions; and it has become a practice for young men, who think to attend some graduate school, to write to several schools and inquire what aid they can get. This practice closely resembles a practice which has obtained in divinity schools for many years, and which has had a deplorable effect on theological education and the profession of the minister. The aids offered in the Graduate School of this University are numerous, but small. The University Scholarships, so called, simply meet the tuition fee; for at Harvard every student pays the tuition fee whether he hold a fellowship, or scholarship, or not. The fellowships available in the Graduate School are also lower in amount than those possessed by most of the universities which offer such aids. In the table of p. 117 of the Dean's report it appears that a large number of persons who apply for aid, but do not receive it, enter the Graduate School, or some other department of the University, without any aid. This fact seems to prove, first, that the fellowships and scholarships attract the attention of young men to the Graduate School, and so recruit it; and secondly, that many of those who apply for aid are really able to come without it, at least for one year. There can be no question that the teaching force of the country is to be greatly improved in quality by the infusion of a considerable number of men who in different universities have prepared themselves for doing good work as teachers by studying hard in the graduate schools. It is undoubtedly a public object to make the way easy for competent students to resort to the graduate schools. As the Dean points out, ambitious men — even though married — sacrifice lucrative positions, and come to Cambridge for a year or two years of hard study. It is not only their interest but the interest of the community that they should do this. Nevertheless prudent university policy inclines to numerous aids of moderate amount rather than to aids of large amount in smaller number.

At the end of his report the Dean asks the attention of all friends of learning to the value of the Graduate School as one of the few places in America at which young men can prepare themselves for a life devoted to the higher scholarship. It is serviceable to the able young men who frequent it from all parts of the United States; it is serviceable in the highest degree to the College proper; and it is serviceable to the country, because it trains a class of men capable of the best literary and scientific work. It is already larger than Harvard College was fifty years ago, and its future is secured by the affection and respect of an influential body of men, already considerable in number, who have been greatly served by it.

The Divinity School had a deficit in the year 1892–93 for two reasons: First, the gift which the Society for the Promotion of Theological Education has usually made to the School of late years for the benefit of the library was not received until after the close of the financial year; and secondly, the income of the large addition to the Hancock fund, which had been counted on in preparing the budget of the School, was consumed in legal expenses. At the request of the Faculty, considerable improvements were made in Divinity Hall; and it is expected that the Divinity students will hereafter occupy a larger portion of the hall than has lately been the custom. The Faculty desire ultimately to reserve the whole of the hall for students of the School.

The undenominational aspect of the School was again emphasized by inviting Professor John Edward Russell, now of Williams College, but lately a professor in the Yale Divinity School, to lecture on Theology in place of Professor Everett, who was to have leave of absence during the year now current. Bishop John H. Vincent of the Methodist Episcopal Church and Dr. Washington Gladden of the Congregational Church were also appointed lecturers for the current academic year.

The Dean mentions (p. 132) one interesting aspect of the School which has of late years become more and more important. The School is furnishing a large amount of instruction for College undergraduates. Far the greater part of the instruction given in the Divinity School is absolutely fit for students who are candidates for the degree of Bachelor of Arts. The linguistic, philosophical, and historical instruction is as suitable for a degree in Arts as it is for a degree in Divinity; and accordingly, no less than four hundred and twenty-one elections were made of Divinity School courses by students of other departments. All the Semitic Courses, all the historical courses, the courses on Comparative Religion, and the two courses on Theology were resorted to by College students. On the other hand, Divinity students resorted to a considerable number of College courses; but their number is so moderate in comparison with the number of College students that their presence in College courses is not inconvenient. Before the creation of a separate school of Theology, the preparation of candidates for the ministry was one of the functions of the College teachers; indeed the College was primarily a school for ministers. Among the changes which the present century has wrought in the constitution of society and of the University are, first, the separation of theological education from preliminary training in the liberal arts, and secondly and later the adoption of theological studies as themselves liberal arts.

The Hancock Professorship of Hebrew and other Oriental Languages was the third professorship established in the University. It was founded in 1764 under the will of Thomas Hancock, — only the two Hollis Professorships preceding it. The fund which supported the professorship was always very small; and on the 1st of August, 1892, it amounted to $6008.43. Mr. Charles L. Hancock, a remote descendant of the founder, has reënforced the fund by a residuary legacy which has thus far yielded $72,890.47. The property from which the reënforcement was derived was real estate in Chicago — a place which had never been heard of when the Hancock Professorship was founded. This incident encourages the hope that other ancient funds of small amount may be increased in like manner by the piety of descendants of their founders. The recent enlargement of the Dorothy Saltonstall Scholarship by Mr. Henry Saltonstall (Treasurer's Statement, p. 9) is another example of the same sort of beneficent piety.

The Law Faculty took a very important step in the year under review, in adopting the rule that after the academic year 1895–96 no persons shall be admitted without examination as candidates for the Law degree, except Bachelors of Arts, Literature, Philosophy, or Science, at some one of 106 institutions named, and persons qualified to enter the Senior Class of Harvard College. They had already enacted in the previous year that special students must pass a satisfactory examination in Latin, French, and Blackstone's Commentaries, unless they hold an academic degree from some institution not enumerated in the list just mentioned, or from a law school which confers the degree of law only after an examination upon a two years' course of at least seven months each. They further decided that special students who after passing the admission examination shall reside three years at the School, and pass in due course the requisite legal examinations, may receive the degree of LL.B., (1) if they at any time during the course entitle themselves to enrolment as regular students, or (2) if they attain a mark within five per cent. of that required for the degree *cum laude*. After the year 1895–96, therefore, the members of the regular classes in the Law School must all have obtained before they entered the Law School a respectable degree in Arts, Literature, Philosophy, or Science; but persons who have entered the School as special students may nevertheless obtain the degree by passing the legal examinations with distinction on the whole course of three years. Although 106 institutions were named in the preliminary list of institutions whose graduates would be admitted to the Law School without examination as candidates for a degree, it was not supposed that the list was complete, and it will doubtless be enlarged from time to time. The Law Faculty in taking this action gives effective support to what may be called the primary academic degrees in the United States, that is, to the degrees of Bachelor of Arts, Literature, Philosophy, and Science; and it is the first law school in the country to give that support to colleges and scientific schools.

The exclusion of all special students except such as could pass an examination in Latin, French, and Blackstone took effect in June and September, 1893; and the consequence was that, whereas there were seventy-one special students in the Law School last year, there are only twenty-two during the current year. The regular classes gained eight students in spite of the application to every year of the School of a rule heretofore applied only to students of the first year — namely, that no student who fails to pass an examination in at least three subjects at the end of a year will be permitted to return to the School in the following year. There was, therefore, a reduction of forty-one in the total number of the School.

In explanation of the large loss of special students, caused by an examination which only includes three subjects, it should be stated that the Law School maintains an admission examination of a very peculiar kind. Blackstone's Commentaries are nowhere taught in this country except in a few law schools; and there are many very respectable secondary schools in the United States in which only one foreign language is taught. In short, the admission examination of the Law School is a thing by itself, having no relation to the common programmes of secondary schools.

The Faculty tried an experiment in 1892–93 on the division of the first year's class into two sections in all the subjects but one, different teachers having charge of the two sections. This method, however, did not find favor; and it has been abandoned in all the subjects except Torts.

The report of the Dean deals largely with the development of the School and of the Library. For the prudent yet rapid increase of the Library the School is greatly indebted to the Librarian, Mr. John H. Arnold, who has acquired during twenty-one years of service a remarkable knowledge of legal bibliography and of the best ways to buy law books both old and new.

The School again had a large surplus of receipts over expenditures; and it has now laid up a balance of $76,301.20, all of which can be used to maintain the instruction and equipment of the School, in case the very restrictive measures which the Faculty have adopted during the past three years should have the effect to diminish seriously the number of students. The reduction in the number of special students which has already taken place presents no serious aspect, and it is not supposed that the regular classes will be much diminished by the new legislation which takes effect at the close of the year 1895–96.

The great event at the Medical School in the year 1892–93 was the going into effect of the new rule requiring four years of study for the degree of Doctor of Medicine. The anticipated reduction in the size of the School did not take place, however; on the contrary, the number of students was larger than ever before. A small reduction has taken place at the beginning of the current year; but whether it be due to the four years' course or to the prevailing financial depression is doubtful.

The year is also to be remembered for the large addition made to the salaries. The total expenditure for salaries in 1891–92 was $47,212; in the year 1892–93 it was $67,112. For the first time in the history of the Medical School, the salaries of those professors who give their whole time to the School were placed on a level with the salaries of professors in the Faculty of Arts and Sciences and the Divinity School. The professors and other teachers who practice medicine are not remunerated on that scale; first, because they do not give their whole time to the School, and secondly, because their connection with the School ordinarily increases their private practice. It seems probable that the revenues of the School will be maintained at the present level, the addition of a fourth-year's class compensating for some reduction in the size of the entering classes.

The Dean mentions in his report (p. 145) the continued decline in the number of college and scientific school graduates in the entering classes of the School. The percentage of graduates of colleges and scientific schools increased with some rapidity from 1875 to 1884, since which date it has rapidly declined with only one slight check in the decline. The figures are as follows: —

Year.	Percent of Graduates.	Year.	Percent of Graduates
1884	53.9	1889	34.4
1885	53.3	1890	38
1886	46.8	1891	36.8
1887	45	1892	28.2
1888	38.8	1893	23

This remarkable diminution in the proportion of graduates of colleges and scientific schools in the first-year's medical class certainly demands the serious attention of the two Governing Boards and the University Council. It is a matter over which the Medical Faculty seems to have no control whatever. It takes place against their will, and threatens the best interests both of the School and of the community.

A resolute attempt was made for about four months, beginning on the 30th of November, 1892, to raise an endowment for the Dental School by general subscription. Committees of the

Faculty and the alumni worked diligently on behalf of the School, and only relinquished the attempt when the increasing business depression made it obvious that nothing more could be done. They succeeded in procuring subscriptions to the amount of $18,000 — $6,025 having been paid in up to August 1st, 1893. The School has now a balance of $8801.44, of which both principal and income are at the disposition of the School; a permanent endowment of $15,255.85; and gifts towards the new building to the amount of $6,427.63. This is the entire endowment of a department of the University which was organized twenty-seven years ago.

The Dental Museum under the care of Dr. Waldo E. Boardman is rapidly increasing in value and interest. It contributed to the University exhibit at the Chicago Fair two cabinets containing nearly a thousand well-arranged specimens.

The need of a suitable building for the Dental School has been repeatedly mentioned in these reports. The increase in the number of students make this need more and more pressing. The laboratories and the Infirmary are much too small; and the entire equipment of the School is exposed to destruction by fire, — its present building, the old Medical School on North Grove Street, being very combustible.

The recent rate of growth in the Veterinary School is maintained; and it has been possible to add some new courses of instruction, — chiefly through the unrecompensed labors of the gentlemen who give the instruction. The School needs a pathological and bacteriological laboratory, but has no means of supplying this need. The students' fees do not pay much more than one half the annual cost of the School; and the balance is made up from the earnings of the Hospital. The report of Dr. Osgood, the Surgeon-in-charge, is therefore of the utmost interest to the School. If the Hospital were not able to pay from three to four thousand dollars a year towards the support of the School, the School could not be maintained. The year 1892–93 was a favorable one in the Hospital — the total receipts of the year being larger than ever before. The building occupied by the Hospital was improved in several respects ; and more business was done in it. Dr. Osgood states the number of animals treated during the year in the Hospital to be as follows : six hundred and six horses, four hundred and sixty-four dogs, and forty-nine other animals. In addition to these animals, seven hundred and thirty-four horses, three hundred and seventy-six dogs, and forty-four other animals were brought to the Hospital for examination and advice only. All these animals were utilized for the instruction of the students. The number of surgical operations performed at the Hospital during the year was four hundred and eighty-three. These figures indicate the extent of the clinical opportunities which the students enjoy. Autopsies are made on all animals which die at the Hospital, the veterinary practitioner having a great advantage in this respect over the practitioner of medicine or surgery for the human species.

Dr. Osgood advises the abandonment of the subscription plan, which was adopted by the School in imitation of the Royal Veterinary College of London — an institution which has a very large number of annual subscribers, and derives from them an important part of its support. The Harvard Veterinary Hospital has never had in any one year as many as two hundred subscribers ; and it seems probable that the subscription method reduces the receipts of the Hospital rather than increases them. The subscription method has never been entirely satisfactory to the authorities of the School. In this Report for the year 1883–84, and again in the Report for 1884–85, doubts were expressed as to the advantages of the method. It has always been a serious objection to the subscription plan, that the veterinary profession in the neighborhood of Boston objected to it, as having a tendency to lower the proper standard of charges for veterinary service. In the first year that the subscription method is abandoned there will appear a serious diminution in the receipts of the Hospital, for most of the subscriptions are collected in June or July, near the end of the financial year ; but in the following year it is believed that the receipts of the Hospital would be decidedly larger as a direct result of the abandonment of that plan.

The growth of the general Library in Gore Hall and of the special libraries in the laboratories and class-rooms is in one sense an embarrassing phenomenon; for the University has no rooms in which to arrange properly the increasing stores of books, or to put them conveniently at the disposition of the readers. But from another point of view, the growth of these libraries and the increased use made of them are the most encouraging features in the annual story of the progress of the University. However troublesome and costly it may be to teach thousands of students the abundant use of books, it is the most important lesson that can be given them during their student life. There is nothing more essential to scholarship than the habit of thorough comparative study of many books relating to whatever subject a student may have in hand. Free use of books emancipates the student from the dominion of a text-book or single treatise, enables him to practice resort to original authorities, and reveals to him the great extent to which matter, once printed, is copied from book to book generation after generation.

The Library buys no books except from the income of funds given expressly for that purpose; but salaries, service, and general expenses in the Library during 1892–93 cost $33,384.82, of which sum $25,764.20 was provided from the income of permanent funds, leaving a balance of $7620.62 to be really paid from the College tuition fees. Considering the immense service which the Library renders to the whole body of students, this is a moderate sum to be drawn from the free income of the College.

It will be observed in the report of the Librarian that a very considerable number of persons who are neither students nor instructors in the University use the general library. In 1891–92 there were two hundred and ninety-eight such borrowers; in 1892–93 — three hundred and sixty-two. The use of the Library on Sunday afternoons increases slowly. The collection of coins has been mounted in thoroughly satisfactory manner between sheets of glass, and is now accessible to students and visitors.

Within the past six years the functions of the Director of the Botanic Garden have been much enlarged. He has become the head, not only of the Garden, but of a large Botanical Museum. This Museum has been built and equipped under his direction, and will doubtless claim a large share of his time for many years to come. The building has been completed and partially furnished with cases, and large quantities of material have been made ready for exhibition. The same building contains all the botanical laboratories, both phaenogamic and cryptogamic; so that the entire work of the Botanical Department, except the work for the Garden and the Herbarium, is now done at the Museum. Within the same period the beautiful and interesting collection of Blaschka models has been received and displayed. All this new work has cost a great deal of money, which has been given by friends of the department, and expended under the direction of Professor Goodale. Until the year 1890–91 the gifts provided for all the expenditures; but on July 31st, 1891, advances had been made to the Botanical Department amounting to $6905.57. On the 31st of July, 1893, these advances had increased to $12,357.58, on which sum the Corporation is obliged to charge interest. The Director points out in his report, moreover, that to carry on suitably the whole department comprised under the titles Botanical Department, Botanical Museum and laboratories, there will be needed annually $3000, in addition to the stated income from invested funds. These funds now amount to $100,000. For carrying on the laboratories the laboratory fees received from the students are an additional resource.

It will be noticed in the report of the Director that a larger area is under cultivation at the Botanic Garden than has been used heretofore, and that expensive repairs have been made upon the greenhouses. If the friends and promoters of the Botanical Department look back to the time,—only a few years ago,—when the department possessed neither laboratories nor Museum, they will see great reason to be grateful for the recent additions to the resources of the department; but if they contemplate the unfinished state of the Museum, the abundance of materials, but the lack of means to pay for the labor required to prepare and display them, they will see that there is still much to be desired.

The report of the Curator of the Herbarium shows that this invaluable collection was well cared for and considerably enlarged during the year under review. The Curator was also able to advance somewhat the preparation of the "Synoptical Flora."

Professor Gray's copyrights are such a valuable resource for the Herbarium — they yielded during the year 1892–93 $3074.65 — that the Corporation find it expedient to cause the several books to be carefully revised from time to time. A revision of Gray's Manual of the Botany of the Northern United States by Professor Coulter and Dr. Sereno Watson was completed before the death of Dr. Watson. The Field, Forest and Garden Botany has been under revision for three years past — at first under the direction of Professor Barnes of the University of Wisconsin, and latterly under the direction of Professor Bailey of Cornell University. It is hoped that this revision will be completed during the coming spring.

The road building in the Arnold Arboretum having been finished by the Park Department of the City of Boston, the planting of the Arboretum will now be carried forward more rapidly than has heretofore been possible. The beauty and the instructive character of the Arboretum increase from year to year; and there can be no doubt that in fifteen or twenty years more this collection of living specimens will be one of the most valuable and enjoyable of the University collections. As a public park also the worth of the Arboretum can hardly be overestimated. It is now twenty-two years since the indenture between the Trustees under the will of James Arnold and the President and Fellows of Harvard College was executed, and it is eleven years since the indenture was executed between the Board of Park Commissioners of the City of Boston and the President and Fellows of Harvard College concerning the use of the Arnold Arboretum as a public park.

The Arboretum has received from its Director, Professor Sargent, the gift of his valuable library amounting to about 5000 volumes and 5500 pamphlets. Professor Sargent has also notified the Corporation of his intention to purchase and give to the Arboretum books to the amount of $10,000. This valuable library, together with the herbarium, and numerous specimens of woods, fruits, and other tree products, are now safely housed in the Hunnewell building.

The Director of the Chemical Laboratory and the Mineral Museum reports improvements made in the Laboratory, and valuable accessions to the Museum. Both the Laboratory and the Museum made important contributions to the exhibit of Harvard University at Chicago. The collection of about three hundred new substances discovered and studied in the laboratories at Cambridge was well designed to give an expert some conception of the activity of the University in contributing to the progress of chemistry. The Director mentions with legitimate satisfaction that the best secondary schools are giving increasing attention to chemistry as an elective subject among the requirements for admission to Harvard College; and that the mode of teaching chemistry in these schools is steadily improving. A very useful improvement was made in the organic laboratory in the upper story of Boylston Hall, by putting in a system of seven exhaust fans, fourteen inches in diameter, driven by an electric motor, one fan sucking each of the seven hoods. The effect on the air of the room is all that could be wished; but the plant cost $1000, and the power will cost at least $100 a year. The only objection to the method, except its cost, is that the fans and pulleys make a disagreeable noise. A similar method, except that steam power is used, has been applied to the ventilation of the kitchen of Memorial Hall with equally good results.

The Jefferson Physical Laboratory has made a very important contribution to the study of physics in schools by demonstrating that physical apparatus can be provided for school use at a cost which brings the apparatus within the reach of large numbers of schools, both public and private. This apparatus, though plain and simple, yields accurate results, and is thoroughly adapted for teaching physics to pupils of the grammar and high school ages by the laboratory method. It has all been invented and, in the first instance, made in the Jefferson Laboratory; but is now manufactured and sold by competent dealers. Specimens of the apparatus were exhibited at the World's Fair at Chicago as an original product of the Laboratory. It is hoped that through the use of this cheap but excellent apparatus a thorough course of instruction in exact physical measurement may be introduced into grammar and high schools. The Laboratory also trains a certain number of competent teachers of physics for colleges, scientific schools, and secondary schools. The Director points out that there have been supplied to other institutions within the past three years one professor, one assistant professor, and two instructors. During the year 1892–93, and also during the current year, a course in physics has been provided at the Laboratory without charge for teachers in Cambridge schools, the University hoping in this way to promote the introduction of the study of physics into grammar schools. The Director very justly remarks that the tendency in physical departments of universities to-day is to the carrying on of shops and working laboratories, rather than to the collecting of apparatus for lecture use — the newer method being indefinitely more expensive than the older, but also much more effective for educational and scientific purposes.

The fire-proof building on the Observatory grounds for the storage of stellar photographs was completed during the past year, and nearly thirty thousand stellar photographs were safely transferred to it. The building is not only a safe for storing plates and manuscripts, but a work shop: so that the photographs are not exposed to destruction by fire while they are being studied. By the persevering efforts of Mr. George O. Shattuck, a member of the Visiting Committee to the Observatory, subscriptions to the amount of $9662.51 were procured towards the cost of this building, the rest of the cost having been charged to the funds of the Observatory. The report of the Director of the Observatory describes the use made of each instrument in Cambridge, and also of the instruments which have been sent to Peru, and enumerates the publications of the Observatory during the year. No additional words are necessary to portray the extraordinary activity which prevails in all departments of the Observatory, — the facts speak for themselves. The station in Peru continues to yield many interesting discoveries. There can be no doubt that the atmospheric conditions at Arequipa are extraordinarily favorable. Beside astronomical observations, meteorological observations are constantly taken; and Professor Bailey has succeeded in establishing a station with self-registering instruments at an elevation of 19,200 feet, — which is far the highest meteorological station in the world,

Cambridge is distinctly deteriorating as a site for an astronomical observatory. The introduction of electric lights in the immediate vicinity of the Observatory and throughout the suburbs of Boston proves to be a serious drawback; and the Observatory will doubtless suffer some disturbance from the passage of cars on the electric railway to be constructed on Concord Avenue within a short distance of its piers and domes. It seems probable therefore that Cambridge will be in the future less important as a place for observation than the station at Arequipa, but that the reduction of the results of observations, the study of photographic plates, and the publication of the Annals will continue to be done here.

The Uriah A. Boyden Fund which on the 31st of July, 1888, amounted to $240,995.50 has been reduced in the course of five years to $203,013.10, in consequence of the unexpected cost both of establishing the station at Arequipa and of carrying it on. Buildings, transportation, and living expenses have all proved dearer than was anticipated, in spite of the fact that the Peruvian Government has permitted the free entry of all instruments and supplies destined for the station. It has been the desire of the Corporation that a portion of this $32,982.40 should be restored to the Fund by transferring to other funds a portion of the expenditure on the Peru station. The large annual gifts received from Mrs. Draper ($9999.96 in 1892–93) continue to be spent year by year upon the productive researches of the Draper Memorial. The final payment from the estate of the late Robert Treat Paine, namely, $153,447.51, on account of his residuary bequest to the Observatory, raises the fund which bears his name to the sum of $273,557.86, and makes it the largest fund held by the University for purposes of pure research.

In the year under review, the teaching force in the department of Zoölogy was increased by the addition of an instructor. The force now consists of the Hersey Professor of Anatomy, three instructors, one lecturer, and two assistants, not counting assistants temporarily employed for the elementary class in Zoölogy. The Museum of Comparative Zoölogy and the Zoölogical department prepared for exhibition at Chicago instructive plans and photographs of the building, and specimens of apparatus to illustrate methods of instruction. The report of the Curator shows how great an amount of work is annually required to keep the collections in order, to replenish them when necessary, to arrange accessions by gift, and to extend little by little the labelling of the collections. Even the educated public has very little idea of the cost of maintaining a great collection to illustrate the animal kingdom in all continents and oceans, and in all ages of the earth's crust. The permanent funds of the Museum are entirely inadequate for the work which is imperatively needed. The University is able to contribute nothing but very moderate annual appropriations for fuel and service; and the great amount of instruction given at the Museum by professors, instructors, and assistants who are paid by the University really increases, instead of lightening, the charges on the funds of the Museum. With numberless things constantly in view which might be done for the benefit of students, the convenience of investigators, or the delight of the public, the narrow resources of the Museum are a severe trial to the patience of its Curator and assistants. In almost every room interesting additions or rearrangements might be made, the labelling might be improved, gaps might be filled, and various groupings illustrative of the associations or habits of animals might be arranged; but for all these desirable things there is no money.

The Curator makes an interesting suggestion (p. 211) to the effect that some arrangement be made between the United States Fish Commission and representatives of leading American universities, by which the exceptional facilities for marine research at the Fish Commission's station at Wood's Hole might be made available for original investigation. A large establishment, originally created at that harbor by the Fish Commission, is no longer utilized to the full. The Curator of the Museum has for several years provided at his own charges at his marine laboratory at Newport admirable facilities for advanced students in zoölogy. The number of students at this laboratory has increased to such an extent that it will no longer be practicable for the Curator to accommodate all the applicants. It has not been the practice to maintain at Cambridge a Summer School in Zoölogy, and the University itself has no zoölogical station at the seaside. It may be doubted whether it is worth while to conduct a Summer School in Zoölogy for elementary students; but of course it is very desirable that all students in the University who are competent for advanced study in zoölogy should have facilities for summer work by the sea, and particularly for the collection of material for winter use. In some departments of zoölogy, this collecting can be done with simple means; but in others, steam-launches, and even sea-going vessels are essential. Hence the importance of the suggestion made by the Curator concerning coöperation between leading American universities and the Fish Commission.

The Director of the Peabody Museum of Archaeology and Ethnology had leave of absence during the year 1892–93 in order that he might take charge of the Department of Ethnology at the World's Columbian Exposition. The connection of the Director of the Museum with the Department of Ethnology at the World's Fair will doubtless result to the advantage of the Museum through the enlargement of his experience and the acquisition of objects or reproductions of objects which made part of that great exposition.

The death from fever at Copan of Mr. John G. Owens, the leader of the second expedition to Honduras, was greatly regretted by the friends of the Museum and by all who had become acquainted with him during his brief connection with the University. His lamented death diminished in some respects the returns which had been hoped for from this expedition; and has also postponed the sending of a third expedition to the same field.

The Semitic Museum, which the University owes to the generosity of Mr. Jacob H. Schiff, was increased during the year both by purchases and gifts; but unfortunately the space assigned to this collection in the Peabody Museum has been entirely filled, so that an important portion of the collection cannot be unpacked and exhibited, but is stored in the basement of the building. On the 1st of August, 1893, there still remained unexpended $2342.12 of the original gift of $10,000; but since the opening of the academic year, this amount has been reduced to about $1000, all of which is pledged for objects ordered at Constantinople. The Overseers' Committee on the Semitic Department have perceived the need of permanent and larger quarters for the Museum; and members of the Committee have made provisional subscriptions amounting to $26,000 towards the cost of a building. The interest manifested in this Museum both by students and by the public is constantly increasing, quite in proportion to the increasing interest in Hebrew, Assyrian, and Arabic literature and history.

The Schools Examination Board examined nine secondary schools during the year 1892–93 — two public schools, five endowed, and two private. Two old and famous schools were included in this list, namely, the Roxbury Latin School and Phillips Exeter Academy. The examiners were, with one exception, University teachers. They found the work interesting; and most of them became convinced that it would prove serviceable, both to the schools and to the University. The members of the Board took a strong interest in the work, and a personal share in it. It will be remembered that the reports are made to the headmasters, or principals, and are not to be published by either party. It is the school and its teachers that are examined — not the pupils. No record is made concerning the attainments of individual pupils. As was intimated in last year's Report, the expense of these examinations is so considerable as distinctly to limit the work of the Board — a complete examination costing from $120 to $250, according to the remoteness of the school from Cambridge. Of the nine schools examined in the first year, the most remote was situated in Peekskill, N. Y. It will require the experience of some years to determine whether in the opinion of the schools the advantages derived from the examinations compensate for their cost.

During 1892–93 the University provided gratuitously three courses of instruction for teachers in the Cambridge grammar schools, — one on experimental physics, one in geography, and one in geometry. These courses were regularly attended by competent classes, and are believed to have borne good fruit. Three courses are again furnished by the University during the current year on physics, English composition and botany. These courses are open to Cambridge teachers without fee, and to a small number of teachers outside of Cambridge on payment of a fee. The University is glad to coöperate with the city of Cambridge in these experiments for the improvement of grammar schools.

On the 13th of February, 1893, Mrs. Catherine Page Perkins executed an agreement with the President and Fellows to build a dormitory for the College at a cost of about $150,000, to be called Perkins Hall in memory of Daniel Perkins (A.B. 1717), Richard Perkins (A.B. 1748), and William Foster Perkins (A.B. 1819), and to be designed for the accommodation of students of small means. The site was determined on, and the preparation of the plans immediately begun; but before the contracts were ready for signature, Mrs. Perkins died very suddenly early in May. Her will, however, made some years earlier, gave to the President and Fellows the same sum of $150,000 for the same uses. Of the three graduates who are to be commemorated in this hall, the first was a minister who served for sixty-two years the parish of Bridgewater; the second, his son, practiced medicine for more than half a century in the same town; the third (the grandson of Daniel) died young without entering any profession. The money from which this hall will be built was made and saved by three brothers, of whom Richard Perkins, the husband of Catherine Page Perkins, was one. All three brothers died without heirs. On the death of Mr. Richard Perkins a few years ago, a considerable part of the fortune was distributed by his will to various institutions of public utility. On the death of his widow, almost all the remainder was distributed in like manner, — the Boston Museum of Fine Arts, the Institute of Technology, Harvard University, and the Harvard

Annex receiving large gifts under one or other of the two wills. The distribution of this fortune, won in honorable trade, and preserved by good judgment, is a striking illustration of the way in which private wealth in the United States may soon be converted to beneficent public ends.

Shortly after the untimely death of Phillips Brooks, a committee of his classmates and friends was organized to collect money with which to build a memorial of him at Harvard College. On the 9th of March, 1893, the President and Fellows agreed to a declaration of trust, or terms of subscription, prepared by this committee for the Phillips Brooks House. It was agreed that the plans should be made satisfactory to the President and Fellows, who should assign a good site for the building in the College Yard, and accept the building and its endowment upon the trust to maintain and use the building, and apply the endowment to its maintenance, in such manner as they in their discretion from time to time might deem best for the religious, charitable, and social interests of the University, the President and Fellows to arrange all details of use and administration in accordance with their own judgment; "provided, however, that, among other good uses, the building shall always be used impartially and without favor for all those forms of spiritual activity, benevolent action, and religious aspiration in which the best life of the University may, without distinction of sect or denomination, from time to time find expression." The subscriptions for this object were payable either to the Treasurer of the Committee or to the Treasurer of Harvard University. The Treasurer of the University acknowledges in his statement the receipt of $5983.26 for this object; but a very much larger, though still insufficient, sum had been received by the Treasurer of the Committee, before the prevailing financial depression compelled the suspension of the undertaking.

One of the most interesting gifts of the year was that of Professor Henry Willard Williams, who, shortly after retiring from the Professorship of Opthalmology which he had held for twenty years, gave the President and Fellows $25,000, the income of which is ultimately to be used toward the salary of that professorship. Gifts from professors are always valuable quite out of proportion to their amount; because they proceed from persons thoroughly acquainted with the administration and the function of the University, and with the beneficial quality of the particular object or objects which they endow.

The Trustees of the Cambridge Hospital received last spring a gift of $5,000 from Mrs. Martha T. Fiske to endow a bed in the Hospital in memory of her late husband, Mr. Josiah Mason Fiske, a native of Cambridge, the bed to be used, first, by the students of Harvard College, and secondly, for the general purposes of the Hospital. This provision is a very welcome one, because the University has no adequate infirmary of its own, — indeed only a small hospital for the isolation of contagious diseases. Since there are about 2600 students in Cambridge, many of whom are far from their homes and in narrow circumstances, a right to use the admirable facilities of the Cambridge Hospital may at any moment be precious.

The subject of an additional dining-room for the University was repeatedly discussed by the Corporation in the spring of 1893 on petitions from the Dining Hall Association and other students. No affirmative action was taken on the subject; for the Corporation was unwilling to build another hall to be conducted like the present one, and it was not made certain that a sufficient body of students desired to use a hall conducted on the restaurant plan. The problem how to provide suitable food for such a number of students as are gathered in Cambridge, at reasonable prices, and under agreeable conditions, is still far from complete solution. The general tables in Memorial Hall — about one-third of the whole number — are at present over-crowded, and the quarters of the Foxcroft Club are too small for the present membership. The Hall and the Club together accommodate a little more than one-half of the whole number of students in Cambridge.

The financial year 1892–93 was satisfactory as regards the increase of the funds and balances by gifts and bequests — the total increase of the year being $552,298.55; but a large proportion of this increase, namely, $176,608.44, consists of building funds which will disappear from the Treasurer's statement when the buildings for which they were provided shall have been erected. The year was a costly one, the annual expenses proper, excluding payments for new buildings and for repairs, insurance and taxes on real estate held as investment, having for the first time in the history of the University exceeded a million dollars; but the Schools of Divinity, Law, and Medicine, the Dental School, the Scientific School, and the Bussey Institution are all in a satisfactory condition as regards the proportion between their annual receipts and their annual expenditures. The Divinity School had, to be sure, a deficit for the year 1892–93; but this deficit was due to circumstances which may fairly be called accidental, and are not likely to recur. Moreover, the School has a credit balance of $26,360.41, the whole of which may be applied to the annual expenditures of the School; and this balance is larger than it was ten years ago, or twenty years ago. The Law School, the Medical School, and the Scientific School all have similar disposable balances. The Veterinary School, now eleven years old, almost succeeded in living within its income. The number of its students is increasing; and both the School and its Hospital command more and more the respect and confidence of those who are interested in domestic animals. The School owes the University $19,019.87; but it is reasonable to expect that, as it becomes established in the favor of the community, it will be able to repay this advance, as older departments of the University have done before. It is satisfactory to recall in this connection that the Dental School had a period of struggle and of debt; but that it has now paid its debts, supports itself — with important aid from the Medical School — and has obtained an endowment which amounts in all to $30,484.92. The Scientific School enjoyed an increase of income to the amount of $12,064.00, and increased its expenditures by $14,484.00. This increase of expenditures resulted chiefly from an increase in the number of salaries, and in the appropriations for instruments and apparatus for instruction, and was made necessary by the large increase in the number of students. For the current year there is a similar enlargement of the number of students, and a corresponding expansion of expenditures; but the budget of the School is in a satisfactory condition.

The departments of the University in which the relation of income to expenditure has been unsatisfactory for two years past are the departments called University, College, and Library, which depend ultimately, as the accounts are kept, on the income of the College proper. The receipts credited to the University account are never equal to the payments charged to that account, and the same is the case with regard to the Library, the adverse balances in these two departments being met by the College. For the year 1891–92, there was a deficit in these three accounts combined of $6,432.88; but for the year 1892–93, which is now under review, the deficit was $25,181.26. These deficits have to be charged to the account called the Stock Account, which is really an accumulated balance, the principal of which, as well as the income, is at the disposal of the Corporation. There is one other similar fund called the Insurance and Guaranty Fund. These two funds are the only resources of that sort in possession of the Corporation. From various causes, such as annual deficits and surpluses, the crediting to the Insurance and Guaranty Fund of a large part of the Fire Subscription of 1872–73, and the charging to the same fund of the cost of the addition made to Gore Hall in 1876, their combined amount has fluctuated considerably during the last twenty-four years; but, on the whole, they have diminished. In 1869, the Stock Account was $197,034.48, and the Insurance and Guaranty Account was $74,730.61, the total being $271,765.09. These two funds stand as follows in the Treasurer's Statement for 1892–93 — the Stock Account at $98,830.23, and the Insurance and Guaranty Fund at $141,638.74, the total being $240,468.97. These two completely unrestricted funds have therefore diminished by $31,296.12 within the past twenty-four years. Early in this period a Repair Fund of $10,000 was also used up. To the statement that expenditures have exceeded receipts in the combined account called University, College, and Library by $31,614.14 during the past two years must, therefore, be added the further statement that the disposable balances against which such deficits can be charged are not so large now by $31,296.12 as they were twenty-four years ago, in spite of the fact that the total of the permanent funds has been multiplied by three and three quarters during that period.

This condition of things is due in the main, first, to the efforts of the Corporation to raise the salaries of teachers in all the grades, and to increase the number of teachers in proportion to the increase in the number of students; and secondly, to the great change in the general scale of expenditure in and on College buildings and on apparatus for teaching, including collections. Although the scale of the University salaries is still low, it has been raised more than fifty per cent. since 1869. As to the scale of expenditure, it is only necessary to recall the facts that before 1869 there was not a single steam-plant on the University premises; not a bath-room or water closet in any University building; no lights in the College Yard or entries at night; no laboratories for students, except that of Chemistry; no Memorial Hall; no College play-grounds, except the delta between Kirkland and Cambridge streets; no departmental libraries; no seminaries; no conferences; no summer courses; and no Graduate School.

Whatever are the causes of the deficits of the past two years, it is plainly the duty of the Corporation to contract somewhat their annual expenditures for the College, the Graduate School, and the Library. Measures to this end were promptly taken as soon as the accounts of the year 1892–93 had been made up. An increase of students having again occurred in the College and the Graduate School during the current academic year, and the contracts with teachers annually appointed having been concluded last spring, the retrenchments of the current year cannot be made on the number of salaries except in the case of accidental vacancies. They must be made on repairs and improvements, wages, printing, appropriations for collections and laboratories, and what are called general expenses. The prevailing financial depression also admonishes the Corporation not to count on a continuance of the recent very rapid increase in the number of students resorting to the University, and to be prepared for some diminution of income from their investments.

The attention of the Overseers is respectfully invited to the following reports on the several departments and scientific establishments.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, 6 January, 1894.

REPORTS OF DEPARTMENTS.

THE FACULTY OF ARTS AND SCIENCES.

To the President of the University:

Sir, — I have the honor to present the following report upon the action of the Faculty of Arts and Sciences for the academic year 1892–93: —

The increase in the number of courses of instruction provided by the Faculty has made it necessary for the last two or three years to condense materially the statement of courses given in the annual report, and in some cases to omit particulars which, with a better command of space, might have been shown with advantage. The information given in advance to the students of the University and to others, to assist in the choice of studies and to exhibit the opportunities now offered here, is much more ample. The Faculty issue near the close of the academic year their Announcement of Courses for the coming year, giving the careful condensed statement of information which, with little change, afterwards appears in the Annual Catalogue. Besides this publication, the several departments of instruction, (as for example, that of Classics, Philosophy, Mathematics, or Geology), have of late years adopted the practice of compiling, each for itself, a somewhat elaborate statement of the subjects and methods of their proposed instruction for the coming year, with all the detail believed to be necessary by those who are most desirous of attracting students. The special descriptive pamphlets of courses issued in this manner in the closing weeks before Commencement, 1893, comprised in the aggregate more than 300 pages, and taken together give a complete statement of the work of instruction laid out by the Faculty, with a degree of minuteness quite beyond the possible scope of the present report.

In the rearrangement and extension of instruction which necessarily goes on from year to year, the organization of the Faculty in divisions and departments, set forth in my report for 1890–91, has had an increasing influence. The proposal of courses of instruction under this system belongs in some cases to divisions and in others to the departments of which the divisions are made up; but in all cases the present system looks to some body of instructors having closely allied work, for an opinion on the best method of covering any part of their field which is imperfectly provided for, and for a judgment as to the importance of any proposition for additional instruction. The Faculty as a whole reserves its power of judging of any proposed changes or additions from the point of view of the common interest and of an equitable adjustment of increased or diminished resources, but it also looks for a more systematic oversight than formerly of the arrangement of instruction within any given field by the common consent of those specially concerned. It cannot be said that individual initiative is excluded or discouraged; but there is in many and perhaps in most departments a stronger consciousness of combined effort and of mutual adjustment. The divisions and departments steadily gather strength and firmness of organization; they meet and act as bodies for various purposes with increasing regularity, and as a whole, it is believed, are now improving the coördination of a great body of instruction, built up under circumstances which have not always made it possible to adjust single courses carefully as parts of a system.

The list of courses now presented, it will be observed, includes all those given under the jurisdiction of the Faculty, in the Lawrence Scientific School as well as in Harvard College and the Graduate School, and moreover includes courses in Semitic Languages and History, three in Philosophy and two in History, which are also given in the Divinity School, and therefore have Divinity students in attendance upon them, as will appear upon reference to the Report of the Dean of that School.

COURSES OF INSTRUCTION, 1892–93.*

SEMITIC LANGUAGES AND HISTORY.

For Graduates and Undergraduates: —

1. Professor Lyon and Mr. Reisner. — Hebrew. — Davidson's Introductory Hebrew Grammar. — Explanation of parts of Genesis and of the Psalm-book. 3 hours. 1 Gr., 2 Se., 2 Ju., 2 So., 3 Di. Total 10.

6. Professor Lyon. — Babylonian-Assyrian History. — Diffusion of the Babylonian-Assyrian culture through the Phoenicians. 1 hour.
13 Se., 6 Jr., 1 So. Total 20.

12. Professor Lyon. — History of Israel, political and social, from the establishment of royalty till the death of Herod the Great. 2 hours.
1 Gr., 35 Se., 27 Ju., 20 So., 2 Fr., 1 Sp., 1 Sc., 8 Di. Total 95.

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* The classes of students in the several courses are designated as follows: Gr. for Graduate Student, Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp. for Special Student, Sc. for Scientific Student, Di. for Divinity Student, Law for Law Student, Me. for Medical Student.

16[1]. Professor Toy. — History of prechristian Hebrew literature. 4 hours. 1st half-year. 3 Gr., 3 Se., 2 Ju., 1 Sp., 7 Di. Total 16.

13. Professor Toy. — History of the Hebrew Religion, with comparison of other Semitic Religions. 2 hours. 1 Gr., 1 Se., 3 Di. Total 5.

15. Professor Toy. — History of the Bagdad Califate. — Egypt under the Moslems. — The Crusades from Mohammedan sources. 1 hour.
9 Se., 10 Ju., 5 So., 1 Sp., 1 Di. Total 26.

[14. Professor Toy. — History of the Spanish Califate. 1 hour.
Omitted in 1892–93.]

Primarily for Graduates: —

2. Professor Toy. — Hebrew (second course). — Syntax. — Driver's Hebrew Tenses. — Interpretation of parts of the Prophets and the Poetical Books. 2 hours. 2 Se., 1 Ju., 1 Di. Total 4.

[3[1]. Professor Lyon. — Classical Aramaic (Syriac). — Grammars of Nestle and Nöldeke. — The Peshitto version of the New Testament. 2 hours. 1st half-year. Omitted in 1892–93.]

4. Professor Lyon and Mr. Reisner. — Assyrian. — Lyon's Assyrian Manual. — Delitzsch's Assyrian Grammar. — Delitzsch's Assyrische Lesestücke. 2 hours. 1 Gr., 1 Di. Total 2.

5. Professor Lyon. — Assyrian (second course). — Delitzsch's Assyrian Grammar. — The Cuneiform Inscriptions of Western Asia (interpretation of selections). 2 hours. 2 Gr., 1 Ju., 1 Di. Total 4.

7. Professor Toy and Mr. Chester. — Arabic. — Lansing's Grammar. — Nuḫab al-Mulaḥ. — The Thousand and One Nights. 2 hours. 1 Ju., 1 Di. Total 2.

8. Professor Toy. — Arabic (second course). — Wright's Grammar. — The Moallakāt. — Motenebbi. — Ibn Ḫaldun. — The Korān. 2 hours.
1 Gr. Total 1.

[9. Professor Toy. — Ethiopic. — Dillmann's Grammatik and Chrestomathia. 1 hour. Omitted in 1892–93.]

10. Professor Toy and Mr. Reisner. — Phoenician. — Schröder's Phönizische Sprache. — Corpus Inscriptionum Semiticarum. 1 hour.
1 Gr., 1 Ju. Total 2.

Courses of Research.

20*a*. Professor Lyon. — Assyrian Grammar. 1 Gr. Total 1.

[20*b*. Professor Toy. — General Semitic Grammar. 1 hour.
Omitted in 1892–93.]

20*c*. Professor Toy. — Kitāb al Agāni. 1 Gr. Total 1.

INDO-IRANIAN LANGUAGES.

For Graduates and Undergraduates.

1. Professor Lanman. — Sanskrit. — Sounds and inflexions (Whitney's Grammar). — Elementary composition and translation (Perry's Primer). — Reading of easy prose and verse (Lanman's Reader). 3 hours.
4 Gr., 1 Se., 1 Ju., 1 So., 1 Di. Total 8.

2. Professor Lanman. — Sanskrit (second course). — Classical Sanskrit. — Selections from the Pañcatantra and Kathā-Sarit-Sāgara. 3 hours. 1st half-year. 2 Gr. Total 2.

Primarily for Graduates: —

3. Professor Lanman. — Sanskrit (third course). — Introduction to the language and literature of the Vedas. 3 hours. 2d half-year. 2 Gr. Total 2.

4. Professor Lanman. — Pāli. — The Sacred Books of Buddhism. 3 hours. 2 Gr. Total 2.

CLASSICAL PHILOLOGY.

Primarily for Undergraduates: —

1. General introduction to Classical Philology. Lectures by Instructors in the Department. 3 hours. 1st half-year. 1 Gr., 2 Se., 1 Ju., 8 So., 3 Fr. Total 15.

Greek.

Introductory Lectures for Freshmen studying Greek.

(1) Professor Wright. — Homer.
(2) Mr. Gulick. — On Lysias and his Times.
(3) Professor Goodwin. — On Socrates and Plato.
(4) Asst. Professor Morgan. — On the Greek Theatre and Dramatic Performances.

A. Messrs. Parker and Gulick. — Herodotus (selections). — Homer (selections from Books I.–XII. of the Iliad). — Reading at sight. 3 hours. 4 Se., 2 Ju., 2 So., 20 Fr., 1 Sp. Total 29.

F. Mr. Gulick. — Greek Prose Composition (elementary course). 3 hours a fortnight. 2 Se., 1 Ju., 2 So., 16 Fr. Total 21.

B. Asst. Professor Morgan and Mr. Gulick. — Homer (selections from the Odyssey.) — Lysias (selections). — Plato (Apology and Crito). — Euripides (Medea). — Reading at sight. 3 hours. 1 Ju., 2 So., 37 Fr. Total 40.

C. Asst. Professor Morgan and Mr. Gulick. — Homer (selections from the Odyssey). — Lysias (selections). — Plato (Apology and Euthyphro). — Aristophanes (Clouds). — Reading at sight. 3 hours. 1 Ju., 2 So., 28 Fr., 2 Sp. Total 33.

D. Asst. Professor Morgan. — Homer (selections from the Odyssey). — Lysias (selections). — Plato (Apology and Laches). — Euripides (Medea). — Aristophanes (Clouds). — Reading at sight. 3 hours. 1 Se., 1 So., 51 Fr. Total 53.

E. Professor Morgan and Mr. Gulick. — Greek Prose Composition (second course). — Goodwin's Moods and Tenses. 3 hours a fortnight. 1 Ju., 3 So., 21 Fr. Total 25.

1. Mr. Gulick. — Lucian (selections). — Demosthenes (Philippics). — Plato (Protagoras). — Euripides (Iphigenia in Tauris). — Aristophanes (Knights). — Reading at sight. 3 hours. 1 Se., 2 Ju., 11 So., 1 Fr. Total 15.

2. Asst. Professor Morgan. — Aeschylus (Prometheus Bound). — Sophocles (Oedipus Tyrannus). — Thucydides (Book I.). — Aristophanes (Wasps). — Collateral reading of the Acharnians of Aristophanes. — Reading at sight. 3 hours. 1 Se., 1 Ju., 30 So. Total 32.

3. Professor Wright. — Greek Prose Composition (third course). — Translation and original composition. — Oral conversational exercises. 1 hour. 3 Se., 2 Ju., 16 So. Total 21.

Latin.

Lectures to Freshmen, introductory to the study of Terence:

(1) Dr. **Hayley**. — Plautus and Terence.
(2) Asst. Professor **Morgan**. — The Roman Theatre.
(3) Dr. **Howard**. — The Metrical and Musical Element in Roman Comedy.

A. Mr. **Ball**. — Cicero (selected orations). — Virgil. — Practice in reading at sight. 3 hours. 5 Se., 2 Ju., 3 So., 13 Fr., 9 Sp., 1 Sc. Total 33.

F. Mr. **Ball**. — Latin Composition (elementary course). — Collar's Practical Latin Composition. 3 hours a fortnight. 1 Se., 2 Ju., 2 So., 13 Fr., 3 Sp., 1 Sc. Total 22.

B. Dr. **Hayley**. — Cicero (De Amicitia). — Livy (Books XXI. and XXII.). — Terence (Adelphoe and Andria). — Reading at sight. 3 hours. 2 Ju., 4 So., 85 Fr., 4 Sp. Total 95.

C. Dr. **Howard** and Mr. **Ball**. — Cicero (De Amicitia). — Livy (Books I. and II.). — Terence (Phormio and Andria). — Reading at sight. 3 hours. 2 Se., 2 Ju., 8 So., 97 Fr., 5 Sp. Total 114.

D. (*Advanced Course for Freshmen.*) Dr. **Howard**. — Cicero (De Amicitia). — Livy (Books I. and II.). — Terence (Phormio and Heautontimorumenos). — Plautus (Captives). — Reading at sight. 3 hours. 2 So., 35 Fr. Total 37.

E. Dr. **Hayley**. — Latin Composition (second course). — Translation of English narrative. 3 hours a fortnight. 1 Ju., 3 So., 24 Fr., 1 Sp. Total 29.

1. Professor **Smith**. — Tacitus (Dialogus; selections from the Annals.) — Horace (Odes and Epodes). — Reading at sight. 3 hours. 1 Se., 2 Ju., 40 So., 1 Fr. Total 44.

2. Dr. **Howard**. — Tacitus (Dialogus; Germania; Agricola). — Horace (Odes and Epodes). — Reading at sight. 3 hours. 1 Se., 3 Ju., 35 So., 1 Fr. Total 40.

3. Mr. **Parker**. — Latin Composition (third course). — Extended study of Idiom. — Practice in Translation. 1 hour. 1 Gr., 3 Se., 3 Ju., 14 So., Total 21.

Primarily for Undergraduates and Graduates: —

Greek.

6. Professor **Wright**. — Demosthenes (On the Crown, with parts of the Embassy). — Aeschines (Against Ctesiphon, selections). — Lycurgus (Against Leocrates). — Aeschylus (Seven against Thebes). — Sophocles (Antigone). — Aristophanes (Frogs). 3 hours. 1 Gr., 6 Se., 16 Ju., 2 So. Total 25.

7. Professor **Wright**. — Greek Prose Composition (fourth course). — Written composition in the style of Demosthenes and of Plato, with studies of classical models. — Translation of selections of standard English (rhetorical and philosophical). 1 hour. 5 Gr., 5 Se. Total 10.

[4. Professor J. W. **White**. — The Comedies of Aristophanes, with lectures on the Scenic and Private Antiquities. 2 hours. Omitted in 1892–93.]

14. Professor **Allen**. — Homer (Iliad, Books IX.–XXIV.). 3 hours. 1st half-year. 4 Gr., 3 Se., 7 Ju., 2 So. Total 16.

15. Asst. Professor MORGAN. — The Greek Poets between Hesiod and Aeschylus, with special study of Greek lyric poetry. 2 hours. 2d half-year. 10 Gr., 7 Se., 4 Ju. Total 21.

[12. Professor WRIGHT. — Three Centuries of Greek History (600–300 B.C.). — Studies in Institutions and in Biography. — Lectures, with collateral reading and theses. 3 hours. Omitted in 1892-93.]

8. Professor GOODWIN. — Plato (Republic). — Aristotle (Ethics, Books I.–IV. and X.). 3 hours. 10 Gr., 12 Se., 2 Ju. Total 24.

9. Professor GOODWIN. — Aeschylus. 3 hours. 9 Gr., 5 Se., 2 Ju. Total 16.

[10. Professor J. W. WHITE. — The Life of the Ancient Athenians, described and illustrated by the aid of the Literature and of the Monuments. 3 hours. Omitted in 1892–93.]

[11. Professor ALLEN. — History of Greek Literature. — Lectures, with direction of the students' private reading. 3 hours. Omitted in 1892–93.]

LATIN.

4. Professor SMITH. — Horace (Satires and Epistles). 3 hours. 1st half-year. 2 Gr., 3 Se., 6 Ju. Total 11.

9. Mr. PARKER. — Pliny (selected Letters). 3 hours. 1st half-year. 3 Se., 13 Ju., 1 So. Total 17.

6. Mr. PARKER. — Juvenal, (the principal Satires). — Martial, (selected Epigrams). 3 hours. 2d half-year. 1 Gr., 6 Se., 12 Ju., 1 So. Total 20.

5. Professor GREENOUGH. — Ancient Philosophy, as set forth by Cicero (De Finibus; Academica). 3 hours. 2d half-year. 2 Gr., 4 Se., 2 So. Total 8.

7. Mr. PARKER. — Practice in Latin expression and style. — Study of selections from classical prose as models. — Translation into Latin prose. — Original essays. 1 hour. 5 Gr., 4 Se., 1 So. Total 10.

13. Professor SMITH. — Catullus and the Elegiac Poets. 3 hours. 2d half-year. 2 Gr., 6 Se., 7 Ju. Total 15.

8^1. Professor GREENOUGH. — Plautus. — Cicero (selections from the rhetorical works). 3 hours. 1st half-year. 2 Gr., 13 Se., 3 Ju. Total 18.

8^2. Professor GREENOUGH. — Lucretius. 3 hours. 2d half-year. 2 Gr., 12 Se., 4 Ju. Total 18.

10. Professor GREENOUGH. — The Private Life of the Romans, chiefly as illustrated by works of art. — Lectures with collateral reading. 3 hours. 4 Gr., 22 Se., 16 Ju., 6 So., 2 Sp. Total 50.

[11. Professor SMITH. — History of Latin Literature. — Lectures, with direction of the student's private reading. 3 hours. Omitted in 1892–93.]

Primarily for Graduates : —

Seminary. Professors SMITH and WRIGHT directors for 1892–93. — Training in philological criticism and research. — Theocritus (with Herondas) and Horace (Odes, Book IV.). 3 hours. 12 Gr. Total 12.

[20. Professors GREENOUGH and LANMAN. — Greek and Latin Comparative Philology. 3 hours. Omitted in 1892–93.]

[21. Professor WRIGHT. — Introduction to Greek Epigraphy and Palaeography. — Historical Inscriptions and Facsimiles of representative MSS. — Lectures and practical exercises. 2 hours. Omitted in 1892–93.]

31. Professor Allen. — The Elements of Oscan and Umbrian. 3 hours. 2d half-year.
4 Gr. Total 4.

[22. Professor Lane. — Latin Grammar. — Quintilian (Book I.). — Aulus Gellius. — Latin Inscriptions (Allen's Early Latin Remnants). — Discussions of points of grammar, pronunciation, etc. 1 hour. Omitted in 1892–93.]

28. Professor Greenough. — Latin Grammar (Syntax). 3 hours. 1st half-year.
7 Gr. Total 7.

27. Professor Goodwin. — The Politics of Aristotle. 2 hours. 2d half-year.
4 Gr. Total 4.

30. Professor Allen. — The Roman Comedy. — Lectures. — Study of the Menaechmi of Plautus. 3 hours. 1st half-year. 12 Gr. Total 12.

23. Professor Goodwin. — The Athenian Expedition to Sicily in 415–413 B.C. and the history of earlier Athenian intervention in Sicily, studied in connection with Thucydides and other authorities on the history of Sicily. 2 hours. 1st half-year. Gr. 1. Total 1.

[24. Professor Goodwin. — The Constitutional History of Athens and the Judicial Process of the Athenian Courts. 2 hours. First half-year.
Omitted in 1892–93.]

29. Professor Allen. — The Religion and Worship of the Greeks. — Lectures, with collateral reading and investigation. 3 hours. 5 Gr., 1 Se. Total 6.

[26. Professor Greenough. — The private life of the Romans (second course). — Study of special topics. Omitted in 1892–93.]

ENGLISH.

Primarily for Undergraduates : —

A. Professors Hill and Briggs, and Messrs. Hurlbut, Fletcher, Copeland, and Lamont. — Rhetoric and English Composition. — A. S. Hill's Rhetoric. — Lectures on Rhetoric and on English Literature. — Written exercises and oral discussions. 3 hours.
1 Ju., 12 So., 373 Fr., 52 Sp., 58 Sc., 3 Law. Total 499.

B. Asst. Professor Wendell, and Messrs. Fletcher, Carey, Gardiner, Lamont, and Hurlbut. — Twelve Themes. — Lectures and discussions of themes. 1 hour.
1 Gr., 7 Se., 15 Ju., 218 So., 12 Fr., 21 Sp., 20 Sc., 1 B. Total 295.

C. Messrs. Baker, Caffey, and Hapgood. — Forensics. — Lectures on Argumentative Composition. — A brief based on a master-piece of argumentative composition. — Five forensics, preceded by briefs. — Discussions of briefs and of forensics. 2 hours.
2 Gr., 46 Se., 280 Ju., 17 So., 4 Sp., 3 Sc., 1 Law. Total 353.

22. Mr. Gates. — English Composition. 3 hours.
1 Se., 7 Ju., 122 So., 3 Fr., 19 Sp., 2 Sc. Total 154.

6. Professor Taussig and Asst. Professor Hart, and Messrs. Cummings and Hayes. — Oral Discussion of Topics in Political Economy and History. 2 hours. 3 Gr., 26 Se., 1 Ju. Total 30.

10. Mr. Hayes. — Elocution. 2 hours.
2 Gr., 29 Se., 29 Ju., 7 So., 9 Sp., 1 Sc. Total 77.

3^1. Asst. Professor Kittredge and Dr. Garrett. — Anglo-Saxon. — Bright's Anglo-Saxon Reader. 3 hours. 1st half-year.
6 Gr., 6 Se., 2 Ju., 1 So., 1 Sp. Total 16.

For Graduates and Undergraduates: —

[1. Professor Child and Asst. Professor Kittredge. — English Literature. — Chaucer. 3 hours. Omitted in 1892–93.]

2. Professor Child and Asst. Professor Kittredge. — English Literature. — Shakspere. 3 hours.
16 Gr., 30 Se., 35 Ju., 18 So., 1 Fr., 10 Sp., 1 Law. Total 111.

23. Asst. Professor Wendell. — English Literature. — The Works of Shakspere. 1 hour. 5 Gr., 15 Se., 4 Ju., 2 Sp. Total 26.

11. Professor Child and Asst. Professor Kittredge. — English Literature. — Bacon. — Milton. 3 hours. 12 Gr., 5 Se., 3 Ju., 2 So., 1 Sp. Total 23.

7. Mr. Gates. — English Literature of the Eighteenth Century. 1 hour.
7 Gr., 31 Se., 42 Ju., 28 So., 11 Sp., 1 Sc., 1 Di., 1 Law. Total 122.

[8. Professor A. S. Hill. — English Literature. — Poets of the Nineteenth Century. 2 hours. 1st half-year. Omitted in 1892–93.]

[9. Mr. Gates. — English Literature. — Prose Writers of the Nineteenth Century. 1 hour. Omitted in 1892–93.]

13. Mr. Fletcher. — Literary Criticism in England since the Sixteenth Century. 1 hour. 4 Gr., 6 Se., 2 Ju., 2 Sp. Total 14.

12. Asst. Professor Wendell and Mr. McCulloch. — English Composition. 2 hours. 8 Gr., 56 Se., 73 Ju., 2 So., 6 Sp., 2 Sc., 1 Di. Total 148.

18. Mr. Baker. Argumentative Composition. — Eight forensics, preceded by briefs. — Lectures and conferences. 1 hour. 4 Se. Total 4.

Primarily for Graduates: —

19. Asst. Professor Kittredge. — Historical English Grammar. 3 hours. 2d half-year. 6 Gr., 1 Se. Total 7.

[16. Professor Briggs. — History and Principles of English Versification. 1 hour. Omitted in 1892–93.]

5. Professor A. S. Hill. — English Composition (advanced course). 3 hours.
5 Gr., 14 Se. Total 19.

[3². Asst. Professor Kittredge. — Anglo-Saxon Poetry. 3 hours. 2d half-year.
Omitted in 1892–93.]

21. Asst. Professor Kittredge. — Early English. — The Metrical Romances. — Lectures and theses. 3 hours. 2d half-year. 6 Gr. Total 6.

4. Professor Child and Asst. Professor Kittredge. — Early English. — Old English literature from 1200 to 1450. — Mätzner's Altenglische Sprachproben. 3 hours. 9 Gr., 4 Se. Total 13.

14. Mr. Baker. — English Literature. — The Drama from the Miracle Plays to the Closing of the Theatres. 1 hour.
10 Gr., 8 Se., 5 Ju., 1 Sp., 1 Law. Total 25.

[17. Asst. Professor Wendell. — English Literature of the Elizabethan period. 1 hour. Omitted in 1892–92.]

[15. Professor Briggs. — English Literature of the Seventeenth Century. 2 hours. 2d half-year. Omitted in 1892–93.]

24. Professor A. S. Hill. — The Poetry of Wordsworth, Coleridge, Scott, Byron, Shelley, Keats, Tennyson, and Browning. 2 hours. 1st half-year.
6 Gr., 9 Se., 2 Ju. Total 17.

20. Mr. Baker. — Course of Research. 1 Gr., 1 Se. Total 2.

20*a*. Mr. Gates. — English Literature in its relation to German Literature, from 1790 to 1830. 1 hour. 1 Gr., 2 Se. Total 3.

GERMAN.

Primarily for Undergraduates: —

A. Asst. Professor SCHILLING, Mr. NICHOLS, Dr. POLL, Dr. BIERWIRTH, and Mr. COAR. — Elementary Course. — Grammar. — Translation from German into English, and elementary exercises in translating into German. 3 hours. 8 Se., 3 Ju., 12 So., 143 Fr., 8 Sp., 30 Sc. Total 204.

B. Dr. POLL. — Elementary Course. — Grammar. — Composition. — Translation and reading at sight. — Selections in Prose and Poetry. 5 hours. 1 Ju., 1 So., 17 Fr., 2 Sp., 1 Sc. Total 22.

C. Assoc. Professor BARTLETT and Dr. BIERWIRTH. — Intermediate Course. — Grammar. — Composition. — Translation and reading at sight. — Selections from the writers of the Eighteenth and Nineteenth Centuries. 3 hours. 3 Se., 2 Ju., 11 So., 79 Fr., 8 Sp., 4 Sc. Total 107.

1*a*. Asst. Professor VON JAGEMANN and Dr. BIERWIRTH. — German Prose and Poetry. — Selections from Lessing, Schiller, and Goethe. — Lyrics and Ballads. — Modern Historical and Narrative Prose. — Composition. — Reading at sight. 3 hours. 3 Se., 3 Ju., 44 So., 13 Fr., 3 Sp., 1 Sc. Total 67.

1*b*. MR. NICHOLS and Dr. BIERWIRTH. — German Prose. — Subjects in History and Biography. — Composition. — Reading at sight. 3 hours. 1 Gr., 1 Se., 1 Ju., 33 So., 6 Fr., 4 Sp., 4 Sc. Total 50.

1*c*. Dr. ROBINSON. — German Prose. — Subjects in Natural Science. — Reading at sight. 3 hours. 1 Gr., 6 Se., 5 Ju., 8 So., 8 Fr., 1 Sp., 9 Sc. Total 38.

E. Mr. NICHOLS. — German Grammar and practice in writing German (first course). 1 hour. 1 Se., 1 Ju., 13 So., 2 Fr., 1 Sp., 1 Sc. Total 19.

F. Dr. BIERWIRTH. — German Grammar and practice in writing German (second course). 1 hour. 1 Se., 6 Ju., 13 So., 6 Fr., 3 Sp. Total 29.

G. Asst. Professor SCHILLING. — German Grammar and Practice in writing German (third course.) 1 hour. 7 Se., 3 Ju., 4 So., 1 Sp., 1 Law. Total 16.

2. Dr. POLL. — Lessing and the German Drama. — Practice in writing German. 3 hours. 6 Se., 5 Ju., 21 So., 14 Fr., 3 Sp., 1 Sc. Total 50.

3. Asst. Professor SCHILLING. — Schiller and his Contemporaries. — Practice in writing German. 3 hours. 3 Se., 11 Ju., 22 So., 9 Fr., 3 Sp., 1 Sc. Total 49.

4. Asst. Professor FRANCKE — Goethe and the Romantic School. — Practice in writing German. 3 hours. 1 Gr., 4 Se., 18 Ju., 35 So., 6 Fr., 2 Sp., 1 Sc., 1 Law. Total 68.

6. Mr. NICHOLS and Dr. BIERWIRTH. — German Prose (advanced course). — Subjects in History, Literature and Philosophy. — Reading at sight. 3 hours. 1 Gr., 6 Se., 7 Ju., 9 So., 1 Fr., 1 Sc. Total 25.

5. Asst. Professor FRANCKE. — General History of German Literature; the Classic Period of the Eighteenth Century. — Lectures, with collateral reading. 3 hours. 20 Se., 18 Ju., 10 So., 1 Sp. Total 49.

For Graduates and Undergraduates: —

8. Asst. Professor VON JAGEMANN. — German Literature in the Twelfth and Thirteenth Centuries. — Nibelungenlied. — Kudrun. — Hartmann's Iwein. — Wolfram's Parzival. — Walther von der Vogelweide. — Translation into Modern German. — Lectures and theses. 3 hours. 1 Gr., 6 Se., 3 Ju. Total 10.

9. Asst. Professor **Francke**. — German Literature and Art during the Era of the Reformation. — Luther. — The Humanists. — Hans Sachs. — Holbein. — Dürer. — Lectures, reading, and theses. 3 hours. 1st half-year.
2 Gr., 5 Se., 6 Ju., 4 So., 1 Sp. Total 18.

[10. Asst. Professor **Francke**. — Literary and aesthetic criticism during the classic period of German Literature. — Lectures, reading, and theses. 3 hours. 1st half-year. Omitted in 1892–93.]

11. Asst. Professor **Francke**. — The political tendencies in German Literature of the Nineteenth Century. — Heine, Gutzkow, Freiligrath. — The Struggle for National Consolidation. — Lectures, reading, and theses. 3 hours. 2d half-year. 1 Gr., 5 Se., 3 Ju., 4 So., 1 Sp. Total 14.

GERMANIC PHILOLOGY.

Primarily for Graduates: —

12. Asst. Professor **von Jagemann**. — Gothic. Introduction to the study of Germanic Philology. 3 hours. 1st half-year. 10 Gr., 4 Se. Total 14.

14. Asst. Professor **von Jagemann**. — Old Saxon. Introduction to the study of Germanic Philology, continued. 3 hours. 2d half-year.
6 Gr., 2 Se. Total 8.

[13. Asst. Professor **Kittredge**. — Icelandic (Old Norse). — Selections from the Sagas and the Elder Edda. 3 hours. Omitted in 1892–93.]

[15. Asst. Professor **von Jagemann**. — History of the German Language to A.D. 1100. — Old High German. 3 hours. 1st half-year. Omitted in 1892–93.]

[17. Asst. Professor **von Jagemann**. — History of the German Language since A.D. 1100. Middle High German. — Modern German. 3 hours. 2d half-year. Omitted in 1892–93.]

[16. Asst. Professor **Kittredge**. — Germanic Mythology. 3 hours. 1st half-year. Omitted in 1892–93.]

[18. Asst. Professor **Schilling**. — Germanic Antiquties. 1 hour.
Omitted in 1892–93.]

19. Asst. Professor **Francke**. — The History of the Faust legend. 1 hour.
1 Gr., 1 Se., 1 Ju. Total 3.

FRENCH.

Primarily for Undergraduates: —

A. Dr. **Marcou** and Mr. **Henckels**. — (Elementary course.) — French Prose. — Chardenal's First and Second French Courses. 2 hours.
5 Gr., 8 Se., 2 Ju., 11 So., 42 Fr., 19 Sp., 32 Sc., 1 Law. Total 120.

1*a*. Asst. Professor **de Sumichrast**, Dr. **Marcou**, Mr. **Henckels**, and Mr. **Brun**. — Grammar, reading, and composition. — Dumas. — About. — George Sand. — Sandeau. — La Fontaine. 3 hours.
1 Gr., 3 Se., 3 Ju., 32 So., 120 Fr., 20 Sp., 7 Sc., 1 Law. Total 187.

1*b*. Asst. Professor **Sanderson**. — Reading at sight of French Prose. — Grammar. — Translation from French to English and from English to French. 3 hours. 3 Gr., 4 Se., 5 Jr., 22 So., 19 Fr., 14 Sp., 7 Sc., 6 Law. Total 80.

2. Asst. Professor SANDERSON. — French Prose and Poetry. — La Fontaine. — Corneille. — Racine. — Molière. — Beaumarchais. — Alfred de Musset. — Balzac. — Historical Grammar. — Composition. 3 hours.
   9 Se., 18 Ju., 71 So., 64 Fr., 10 Sp., 9 Sc. Total 181.
3. Mr. HENCKELS. — Practice in writing and speaking French (elementary course). 2 hours. 2 Se., 3 Ju., 11 So., 16 Fr., 5 Sp., 2 Sc. Total 39.
4. Dr. MARCOU and Mr. BRUN. — Practice in writing and speaking French (intermediate course). 2 hours.
   5 Se., 5 Ju., 16 So., 6 Fr., 1 Sp., 1 Law. Total 34.
5. Asst. Professor SANDERSON. — Practice in writing and speaking French (advanced course). — Oral discussions. 2 hours.
   3 Se., 8 Ju., 6 So., 3 Fr. Total 20.
6. Professor BÔCHER and Asst. Professor DE SUMICHRAST. — General view of French Literature. — Théâtre classique. — Bossuet. — Voltaire. — Rousseau. — Victor Hugo. — Lectures, readings, and themes. 3 hours.
   19 Se., 27 Ju., 48 So., 3 Fr., 2 Sp., 1 Sc. Total 100.

For Graduates and Undergraduates: —

[7. French Literature in the Nineteenth Century. — Lectures, themes, and collateral reading. 3 hours. Omitted in 1892–93.]

8. Professor BÔCHER and Mr. BRUN. — French Literature in the Eighteenth Century. — Lectures, themes, and collateral reading. 3 hours.
   15 Se., 11 Ju., 8 So., 3 Fr., 1 Sp., 1 Sc. Total 39.

[9. Professor BÔCHER and Asst. Professor DE SUMICHRAST. — French Literature in the Seventeenth Century. — Lectures, themes, and collateral reading. 3 hours. Omitted in 1892–93.]

10. Professor BÔCHER and Asst. Professor DE SUMICHRAST. — French Literature in the Sixteenth Century. — Lectures, themes, and collateral reading. 3 hours. 1 Gr., 7 Se., 3 Ju., 1 Fr., 1 Sp. Total 13.

Primarily for Graduates: —

[11. Dr. MARCOU. — French Literature from the Thirteenth to the end of the Fifteenth Century. — Lectures, themes, and collateral reading. 2 hours. Omitted in 1892–93.]

12. Dr. MARCOU. — French Literature from the Ninth to the Thirteenth Century. — Lectures, themes, and collateral reading. 2 hours.
    1 Gr., 2 Se., 1 Law. Total 4.
20. Asst. Professor DE SUMICHRAST. — Course of Research. 1 Se. Total 1.

ITALIAN.

Primarily for Undergraduates: —

1. Asst. Professor SHELDON. — Elements of Grammar. — Selections from modern authors. — Elementary exercises in writing Italian. 3 hours.
   1 Gr., 17 Se., 23 Ju., 5 So., 3 Fr., 2 Sp. Total 51.
2. Asst. Professor SHELDON. — Literature of the Fifteenth and Sixteenth Centuries. — Torquato Tasso. — Ariosto. — Machiavelli. — Pulci. — Reading at sight. — Syntax and prose composition, with reading of modern texts. 3 hours. 1 Se., 4 Ju., 1 So., 1 Fr. Total 7.

Primarily for Graduates : —

[3. Professor **Nash**. — "Il Trecento" (selections from Boccaccio, Petrarca, Dante). — Early Italian (Nannucci's Manuale della Letteratura del Primo Secolo). — Outline of the History of Italian Literature. — Composition. 3 hours. Omitted in 1892–93.]

4. Professor **Norton**. — Literature and the Fine Arts in Italy during the Middle Ages and the Renaissance, with special study of Dante. 3 hours.
7 Gr., 8 Se., 2 Ju., 1 Law. Total 18.

SPANISH.

Primarily for Undergraduates : —

1*a*. Professors **Nash**. — Grammar, reading, and composition. — Gil Blas. — El Eco de Madrid. 3 hours.
1 Se., 6 Ju., 7 So., 12 Fr., 3 Sp., 1 Sc., 1 Law. Total 31.

1*b*. Asst. Professor **Marsh**. — Elements of Grammar. — Reading of simple modern Spanish. — Elementary exercises in writing Spanish. — Simple conversation. 3 hours. 1 Gr., 10 Se., 8 Ju., 8 So., 4 Fr. Total 31.

2. Professor **Nash**. — Modern Literature (novels, plays, etc.). — Reading at sight. — Advanced Grammar (Syntax). — Conversation. — Prose composition. 3 hours. 5 Se., 5 Ju., 7 So., 1 Sp., 1 Sc. Total 19.

Primarily for Graduates : —

3. Professor **Nash**. — Literature of the Sixteenth and Seventeenth Centuries (selections from Calderon, Lope de Vega, and Cervantes). — Early Spanish (the Poem of the Cid). — Outline of the History of Spanish Literature (lectures, with collateral reading). 3 hours. 3 Ju. Total 3.

ROMANCE PHILOLOGY.

Primarily for Graduates : —

2. Asst. Professor **Sheldon**. — Phonetics, with special reference to the explanation of sound-changes in the Romance languages. 2 hours. 1st half-year. 4 Gr., 1 Se. Total 5.

3. Asst. Professor **Sheldon**. — Old French. — Phonology and Inflexions. — The oldest texts. — La Chanson de Roland. — Joinville. — Chrétien de Troies. — Aucassin et Nicolette. 2 hours. 5 Gr., 2 Se. Total 7.

4. Asst. Professor **Sheldon**. — Provençal. — Language and Literature, with selections from the poetry of the Troubadours. 2 hours. 2d half-year.
1 Gr., 2 Se., 1 Ju., 1 So. Total 5.

[5. Asst. Professor **Sheldon**. — Low Latin. 2 hours. 1st half-year.
Omitted in 1892–93.]

[6. Asst. Professor **Sheldon**. — Old French Dialects, with special reference to Anglo-Norman. 2 hours. Omitted in 1892–93.]

7. Asst. Professor **Sheldon**. — The French Element in English. 2 hours.
4 Gr., 1 Se. Total 5.

20. Asst. Professor **Sheldon**. — Course of Research. 1 Gr. Total 1.

COMPARATIVE LITERATURE.

For Graduates and Undergraduates: —

1. Asst. Professor Marsh. — The History of Classical Learning in Europe from the Fifth to the Fifteenth Century, considered with regard to the relation of modern culture and education to Classical Literature. — Lectures and theses. 2 hours. 2 Gr., 2 Se. 1 So., 1 Sp. Total 6.

2. Asst. Professor Marsh. — Comparative European Literature in the Middle Ages, with especial reference to the influence of France and Provence. — Lectures and theses. 3 hours. 4 Gr., 5 Se. Total 9.

Primarily for Graduates: —

[21. Asst. Professor Marsh. — The Origin and Development of Historical Epic Poetry in Mediaeval Europe. 1st half-year. Omitted in 1892–93.]

[22. Asst. Professor Marsh. — The Legendary and Poetic Material of Celtic Origin and its treatment in the Narrative Poetry of the Middle Ages. 2d half-year. Omitted in 1892–93.]

PHILOSOPHY.

Primarily for Undergraduates: —

Introductory Course.

1. Professors Palmer and Royce, and Dr. Santayana. — General Introduction to Philosophy. — Logic, Psychology, Metaphysics, and History of Philosophy. — Jevons' Elementary Lessons in Logic. — James's Outlines of Psychology. — Royce's Spirit of Modern Philosophy. 3 hours.
2 Gr., 40 Se., 72 Ju., 73 So., 4 Fr., 32 Sp., 10 Sc. Total 233.

For Graduates and Undergraduates: —

Systematic Courses.

2. Dr. Nichols. — Ladd's Outlines of Physiological Psychology, and James's Principles of Psychology. — Laboratory exercises and a thesis will be required. 3 hours. 2 Gr., 13 Se., 6 Ju., 1 Sc., 2 Di. Total 24.

3. Professor Royce. — Cosmology. — Discussion of the Principal Problems of the Philosophy of Nature, with special reference to the modern doctrine of Evolution. — Lectures and theses. 3 hours.
9 Gr., 13 Se., 8 Ju., 1 So., 6 Sp., 1 Sc., 4 Di. Total 42.

[4. Professor Palmer. — Ethics. — The Theory of Morals, considered constructively. — Lectures, theses, and private reading. 3 hours.
Omitted in 1892–93.]

5. Professor F. G. Peabody. — The Ethics of the Social Questions. — The questions of Charity, Divorce, the Indians, Temperance, and the various phases of the Labor Question, as problems of practical Ethics. — Lectures, essays, and practical observations. 2 hours.
5 Gr., 60 Se., 25 Ju., 6 So., 10 Sp., 1 Sc., 24 Di. Total 131.

6. Professor Everett. — The Psychological Basis of Religious Faith. 1 hour.
3 Gr., 11 Se., 2 Sp. Total 16.

7. Professor Everett. — The Content of Christian Faith. — Lectures and a thesis. 3 hours. 1 Se. Total 1.

8. Dr. **Santayana.** — Aesthetics. — The Psychology of Taste and the History of Aesthetic Theories. — Lectures, theses, and private reading. 3 hours. 1st half-year. 6 Gr., 6 Se., 8 Ju., 2 Sp. Total 22.

Historical Courses.

10. Dr. **Santayana.** — Descartes, Spinoza, and Leibnitz. — Lectures, private reading, and discussion. 3 hours. 1st half-year. 2 Gr., 8 Se., 2 Ju. Total 12.

11. Dr. **Santayana.** — English Philosophy from Hobbes to Hume. — Lectures, theses, and private reading. 3 hours. 2d half-year. 2 Gr., 13 Se., 5 Ju., 2 So., 2 Sp., 1 Di., 1 Law. Total 26.

12. Professor **Royce.** — German Philosophical Thought from 1770–1795. — Kant. — Fichte. — Relations of the Literary and Philosophical Movements during this period. — Watson's selections from Kant. — Everett's Fichte. 3 hours. 1st half-year. 2 Gr., 11 Se., 6 Ju., 1 Sp., 3 Di., 1 Law. Total 24.

13. Professor **Everett.** — Comparative Religion. — Studies in the Comparative History of Religions, particularly the Vedic Religion, the Hindu Philosophies, Buddhism, Mazdaism, and the Chinese Religions. 2 hours. 4 Gr., 11 Se., 3 Sp. Total 18.

[14. Professor F. G. **Peabody.** — The Philosophy of Religion; its rise, problem, and results. — Pfleiderer's Philosophy of Religion. — Caird's Philosophy of Religion. — Lectures and a thesis. 1 hour. Omitted in 1892–93.]

15. Professor **Palmer.** — The development of Ethics in England, from Hobbes to the present time. — Lectures, theses, and private reading. 3 hours. 3 Gr., 9 Se., 2 Ju., 3 Sp., 4 Di. Total 21.

Primarily for Graduates: —

Courses of Research.

20*a*. Professor **Münsterberg.** — Psychological Seminary. — Laboratory exercises, and special investigations for advanced students. 7 Gr., 4 Se. Total 11.

20*b*. Professor **Royce.** — Metaphysical Seminary. — Subject for the year: The Development of the Hegelian System. — Hegel's Logic or Phenomenology. — Lectures, papers, and original research. 2 hours. 5 Gr., 1 Di. Total 6.

20*c*. Professor **Palmer.** — Ethical Seminary. — Hegel's Rechtsphilosophie. 2 hours. 4 Gr. Total 4.

Courses on Education and Instruction.

Professor **Royce.** — Twelve lectures on Topics in Psychology of interest to Teachers.

For Graduates and Undergraduates: —

16. Asst. Professor **Hanus.** — The History of Educational Theories and Practices — Lectures, recitations, and a thesis. 2 hours. 2 Gr., 1 Se., 1 Di. Total 4.

Primarily for Graduates.

17. Asst. Professor **Hanus.** — Organization and Management of Public Schools and Academies. — Supervision, Courses of Study, and Instruction. — Lectures, discussions, and the study of schools, with reports written when required. 2 hours. 1 Gr., 1 Se. Total 2.

9. Asst. Professor **Hanus.** — The Theory of Teaching. — Study of topics. — Lectures, a thesis, and discussion. 1 hour. 1 Gr. 2 Se. Total 3.

HISTORY AND POLITICAL SCIENCE.

HISTORY.

Primarily for Undergraduates: —

1. Asst. Professor **CHANNING**. — Mediaeval and Modern European History (introductory course). 3 hours.
2 Ju., 55 So., 227 Fr., 36 Sp., 12 Sc., 1 Law. Total 333.

4. Professor **EMERTON**. — The Middle Ages, from Charlemagne to Dante. — Formation of the European States. — The Holy Roman Empire. — The Roman Papacy as the controlling force in European life. 3 hours. 2d half-year. 1 Gr., 8 Se., 16 Ju., 52 So., 5 Fr., 6 Sp., 1 Sc., 5 Di. Total 94.

For Graduates and Undergraduates: —

3. Mr. **BENDELARI**. — Roman History to the reign of Diocletian. 3 hours.
2 Se., 2 Ju., 1 So., 1 Sp., 1 Sc. Total 7.

[5. Mr. **BENDELARI**. — History of Western Europe from the Germanic Invasions to the Treaty of Verdun. 3 hours. Omitted in 1892–93.]

6. Professor **EMERTON**. — The First eight Christian centuries. — The Conflict of Christianity with Paganism. — Origin and development of the Roman Primacy to its Alliance with the Frankish State. — The Germanic nations as the basis of a new Christian civilization. 2 hours.
5 Gr., 13 Se., 9 Ju., 7 So., Di. 11. Total 45.

7. Professor **EMERTON**. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent (1350–1563). 2 hours. 4 Gr., 5 Se., 4 Ju., 2 So., 1 Di. Total 16.

8. Asst. Professor **GROSS**. — History of France to the reign of Louis XIV. 3 hours. 5 Se., 2 Ju. Total 7.

9. Asst. Professor **GROSS**. — Constitutional History of England to the Sixteenth Century. 3 hours. 3 Gr., 12 Se., 16 Ju., 13 So., 1 Sp. Total 45.

11. Mr. **BENDELARI**. — European History during the Seventeenth Century and the first half of the Eighteenth. — Constitutional History of England during the Stuart Period. 3 hours. 1 Gr., 17 Se., 17 Ju., 7 So., 1 Sc. Total 43.

12. Professor **MACVANE** and Asst. Professor **CHANNING**. — European History from the Middle of the Eighteenth Century. — Constitutional History of England since the reign of George II. 3 hours.
3 Gr., 28 Se., 59 Ju., 55 So., 5 Fr., 10 Sp., 3 Sc., 1 Law. Total 164.

10. Asst. Professor **CHANNING**. — American History (to 1783). 3 hours.
2 Gr., 28 Se., 53 Ju., 62 So., 2 Fr., 8 Sp., 4 Sc., 1 Law. Total 160.

13. Asst. Professor **HART**. — Constitutional and Political History of the United States (1783–1865). 3 hours.
2 Gr., 41 Se., 75 Ju., 38 So., 3 Fr., 17 Sp., 2 Sc. Total 178.

14. Dr. **SNOW**. — History of American Diplomacy. 3 hours.
2 Gr., 22 Se., 6 Ju., 3 So., 1 Sp., 1 Law. Total 35.

Primarily for Graduates: —

[21. Mr. **BENDELARI**. — Early Mediaeval Institutions. Omitted in 1892–93.]

22. Asst. Professor **GROSS**. — The Sources and Literature of English Constitutional History. 1 hour. 1 Gr., 2 Se., 1 Law. Total 4.

23. Dr. **Winsor**. — Geographical Discovery in North America. — Its effect on the struggle for the possession of the Continent. 2 hours. 1st half-year.
2 Se., 1 Jr., 3 So., 2 Sp. Total 8.

24. Mr. **Bendelari**. — Technical Aids to the study of History: Chronology, Diplomatics, Palaeography, etc. 2 hours. 1st half-year.
2 Gr., 1 Se., 1 Ju. Total 4.

25. Mr. **Bendelari**. — The Elements of Latin Palaeography. — Practical Exercises in reading historical mediaeval texts. 1 hour. 2d half-year.
1 Gr., 1 Se. Total 2.

20. I. Seminary in Mediaeval History.
  (*a*) Professor **Emerton**. — Church and State. 2 Gr., 1 Se. Total 3.
  (*b*) Asst. Professor **Gross**. — Local Government. 1 Gr. Total 1.
II. Seminary in Modern History and Diplomacy.
  (*d*) Professor **Macvane**. — Recent Constitutional History. 3 Se. Total 3.
  (*e*) Mr. **Bendelari**. — English History in the Stuart Period.
1 Se. Total 1.
  (*f*) Dr. **Snow**. — Diplomatic History. 2 Se. Total 2.
III. Asst. Professors **Channing** and **Hart**. — Seminary in American History and Institutions. 12 Gr., 5 Se. Total 17.

Government and Law.

Primarily for Undergraduates: —

1. Professor **Macvane**. — Constitutional Government (elementary course). 3 hours. 1st half-year. 17 Ju., 115 So., 81 Fr., 29 Sp., 7 Sc. Total 249.

For Graduates and Undergraduates: —

4. Dr. **Snow**. — Elements of International Law and the History of European Diplomacy. 3 hours. 4 Gr., 37 Se., 18 Ju., 3 So. Total 62.

5. Mr. **Williams**. — History and Institutes of Roman Law. — Institutes of Justinian, including the Law of Inheritance, and Selections from the Institutes of Gaius. 3 hours. 16 Se., 13 Ju., 1 So. Total 30.

6. Asst. Professor **Hart**. — Federal Government, historical and comparative. 3 hours. 1st half-year. 1 Gr., 5 Se., 4 Ju., 1 Sp. Total 11.

7. Professor **Macvane**. — Leading principles of Constitutional Law. — Selected cases, American and English. 3 hours. 2d half-year.
4 Gr., 9 Se., 11 Ju., 2 So., 3 Sp. Total 29.

Primarily for Graduates: —

[10. Professor **Macvane**. — Principles of Government: Selections from leading writers, and studies in the existing political systems of Europe. 2 hours.
Omitted in 1892–93.]

11. Asst. Professor **Channing**. — History of Political Theories, with especial reference to the origin of American Institutions. — Studies from Machiavelli, Calvin, Hobbes, the Puritan state papers, Winthrop, Locke, Rousseau, Otis, Jefferson, Madison, and others. 2 hours.
8 Gr., 5 Se., 2 Law. Total 15.

12. Asst. Professor **Hart**. — Government and Political Methods in the United States, national, state, and municipal. 3 hours.
7 Gr., 8 Se., 2 Ju., 1 Di. Total 15

[15. Dr. **Snow**. — The historical development of International Law. 1 hour.
Omitted in 1892–93.]

[16. Mr. **Williams**. — Roman Law. — The Law of Obligations. — Selections from the Corpus Juris. — Development since the time of Justinian. 3 hours. 1st half-year. Omitted in 1892–93.]

[17. Mr. **Williams**. — Roman Law. — The Law of Inheritance. — Selections from the Corpus Juris. — Development since the time of Justinian.
Omitted in 1892–93.]

ECONOMICS.

Primarily for Undergraduates: —

1. Professors **Taussig** and **Ashley**, and Messrs. **Cummings** and **Cole**. — First half-year: Mill's Principles of Political Economy. 3 hours.

Second half-year: —

Division *A* (Theoretical): Mill's Principles of Political Economy. — Cairnes's Leading Principles of Political Economy. 3 hours.

Division *B* (Descriptive): Labor and Capital, Coöperation. — Hadley's Railroad Transportation. — Dunbar's Chapters on Banking. — Financial Legislation. 3 hours.

1 Gr., 50 Se., 114 Ju., 116 So., 3 Fr., 29 Sp., 7 Sc., 1 Law., 1 Di. Total 322.

10. Professor **Ashley**. — The Economic History of Europe and America, to 1763. 3 hours. 6 Gr., 7 Se., 4 Ju., 3 So. Total 20.

4. Mr. **Cole**. — Economic History of Europe and America since the Seven Years' War. — Lectures and written work. 3 hours.
41 Se., 59 Ju., 45 So., 3 Fr., 12 Sp., 6 Sc. Total 166.

For Graduates and Undergraduates: —

2. Professor **Taussig**. — Economic Theory. — Examination of selections from leading writers. 3 hours.
11 Gr., 10 Se., 11 Ju., 3 Sp., 2 Law., 1 Di. Total 38.

11. Professor **Ashley**. — History of Economic Theory, down to Adam Smith. 2 hours. 2d half-year. 7 Gr., 1 Se. Total 8.

3. Mr. **Cummings**. — The Principles of Sociology. — Development of the Modern State, and of its Social Functions. 3 hours.
5 Gr., 9 Se., 4 Ju., 1 So., 2 Sp., 1 Di. Total 22.

5. Professor **Taussig**. — Railway Transportation. — Lectures and written work. 3 hours. 1st half-year. 7 Gr., 12 Se., 5 Ju., 1 So., 1 Law. Total 26.

6. Professor **Taussig**. — History of Tariff Legislation in the United States. 3 hours. 2d half-year.
7 Gr., 19 Se., 17 Ju., 3 So., 1 Sp., 1 Sc., 2 Law. Total 50.

8. Professor **Dunbar**. — History of Financial Legislation in the United States. 2 hours. 1st half-year. 3 Gr., 19 Se., 11 Ju., 1 So. Total 34.

7^1. Professor **Dunbar**. — The Theory and Methods of Taxation, with special references to local taxation in the United States. 3 hours. 1st half-year.
7 Gr., 9 Se., 2 Ju., 1 So., 2 Sp. Total 21.

7^2. Professor **Dunbar**. — Financial Administration and Public Debts. 3 hours. 2d half-year. 10 Gr., 8 Se., 3 Ju., 1 So., 1 Sp. Total 23.

9. Mr. Cummings. — The Social and Economic Condition of Workingmen in the United States and in other countries. 3 hours.
3 Gr., 10 Se., 7 Ju., 3 Sp., 1 Sc. Total 24.

Primarily for Graduates: —

20. Professors Dunbar, Taussig, and Ashley, and Mr. Cummings. — Seminary in Political Economy. 12 Gr., 4 Se. Total 16.

THE FINE ARTS.

Primarily for Undergraduates: —

1. Asst. Professor Moore. — Principles of Delineation, Color, and Chiaroscuro. — Lectures (once a week), with collateral reading. — Practice in drawing and in the use of water-colors. — Perspective. 3 hours.
18 Se., 11 Ju., 15 So., 1 Fr., 1 Sp., 17 Sc., 1 B. Total 64.

2. Asst. Professor Moore. — Principles of Design in Painting, Sculpture, and Architecture. — Lectures (twice a week), with collateral reading. — Practice in drawing and water-colors. 3 hours.
5 Se., 6 Ju., 3 So., 1 Sp., 1 B. Total 16.

For Graduates and Undergraduates: —

3. Professor Norton. — Ancient Art. 3 hours.
18 Gr., 103 Se., 138 Ju., 81 So., 2 Fr., 22 Sp., 4 Sc., 1 Di. Total 369.

[4. Professor Norton. — Roman and Mediaeval Art, with special study of the development of Gothic Architecture and of the Revival of Art in Italy in the Thirteenth Century. 3 hours. Omitted in 1892–93.]

Primarily for Graduates: —

20. Professor Norton. — Special topics in the History of the Fine Arts.
1 Ju. Total 1.

MUSIC.

For Graduates and Undergraduates: —

1. Professor Paine. — Harmony. 3 hours.
1 Se., 2 Ju., 4 So., 10 Fr., 1 Sc. Total 18.

2. Professor Paine. — Counterpoint. 2 hours. 6 So., 1 Sp. Total 7.

[3. Professor Paine. — History of Music, with analysis of the works of the great masters. 2 hours. Omitted in 1892–93.]

7. Professor Paine. — Instrumentation. 1 hour. 1 Gr., 6 Se., 2 Ju. Total 9.

Primarily for Graduates: —

5. Professor Paine. — Canon and Fugue. 2 hours.
1 Gr., 6 Se., 2 Ju. Total 9.

[6. Professor Paine. — Free Thematic Music. — Fugue in two voices. 2 hours. Omitted in 1892–93.]

20. Professor Paine. — Course of Research. 1 Gr. Total 1.

MATHEMATICS.

Primarily for Undergraduates: —

A. Professor C. J. White. — Logarithms. — Plane Trigonometry, with its applications to Surveying and Navigation. 3 hours. 1st half-year.
1 Gr., 6 Se., 12 Ju., 27 So., 88 Fr., 7 Sp., 14 Sc. Total 155.

B. Professor C. J. White. — Analytic Geometry (elementary course). 3 hours. 2d half-year. 1 Gr., 1 Se., 1 Ju., 16 So., 56 Fr., 8 Sp., 6 Sc. Total 89.

C. Dr. Bôcher. — Analytic Geometry (extended course). 3 hours.
1 Ju., 9 So., 18 Fr., 5 Sc. Total 33.

D. Drs. Osgood and Bôcher, and Mr. Love. — Algebra. 3 hours. 1st half-year. 1 Gr., 9 Se., 8 Ju., 10 So., 47 Fr., 14 Sp., 10 Sc. Total 99.

E. Drs. Osgood and Bôcher, and Mr. Love. — Solid Geometry. 3 hours. 2d half-year. 8 Se., 9 Ju., 11 So., 58 Fr., 11 Sp., 17 Sc. Total 114.

1. Professor C. J. White. — Spherical Trigonometry. — Applications of Spherical Trigonometry to Astronomy and Navigation. 2 hours. 1st half-year.
1 Ju., 4 So., 3 Fr., 1 Sc. Total 9.

2. Professor C. J. White. — Differential and Integral Calculus (first course). 3 hours. 3 Se., 8 Ju., 41 So., 1 Fr., 5 Sc. Total 58.

3. Professor Byerly. — Modern Methods in Geometry. — Determinants. 3 hours. 7 Gr., 1 Se., 1 Ju., 12 So., 1 Sc. Total 22.

4. Dr. Osgood. — The Elements of Mechanics. 3 hours.
5 Gr., 2 Se., 1 Ju., 4 So., 2 Sc. Total 14.

For Graduates and Undergraduates: —

5. Professor Byerly. — Differential and Integral Calculus (second course). 3 hours. 8 Gr., 2 Se., 11 Ju., 6 So., 5 Sc. Total 32.

12. Professor C. J. White. — The Theory of Equations. 3 hours. 2d half-year. 4 Gr., 1 Se., 3 So., 3 Fr. Total 11.

[6. Professor J. M. Peirce. — Quaternions, with applications to Geometry and Mechanics. 3 hours. Omitted in 1892–93.]

7. Professor J. M. Peirce. — The General Theory of Algebraic Plane Curves; with a discussion of the properties of Curves of the Third Degree in point and line co-ordinates. 3 hours. 3 Gr., 2 Se. Total 5.

[8. Professor Byerly. — Analytic Mechanics. 3 hours. Omitted in 1892–93.]

9. Professor J. M. Peirce. — Quaternions, with applications to Geometry and Mechanics (second course). 3 hours. 3 Gr., 2 Se., Total 5.

10. Professors Byerly and B. O. Peirce. — Trigonometric Series. — Introduction to Spherical Harmonics. — Potential Function. 3 hours.
6 Gr., 2 Se. Total 8.

13. Professor J. M. Peirce. — The Theory of Functions (introductory course). 3 hours. 6 Gr., 2 Se. Total 8.

14. Dr. Osgood. — Higher Algebra. 3 hours. 7 Gr., 3 Se. Total 10.

Mathematical Seminary.

Dr. Bôcher. — Subject for 1892–93: Topics in Geometry. Lectures by the students. 5 Gr., 3 Se. Total 8.

Primarily for Graduates:—

[11. Professor B. O. PEIRCE. — Hydrostatics. — Hydrokinematics. — Force Functions and Velocity-Potential Functions and their uses. 3 hours.
Omitted in 1892–93.]

16. Professor BYERLY. — Problems in the Mechanics of Rigid Bodies. 2 hours.
3 Gr. Total 3.

17. Dr. OSGOOD. — The Theory of Functions (second course). 3 hours.
2 Gr., 1 Se. Total 3.

[18. Dr. OSGOOD. — The Theory of Substitutions. Omitted in 1892–93.]

15. Professor B. O. PEIRCE. — Wave Motion. 3 hours. 3 Gr. Total 3.

[19. Dr. BÔCHER. — Functions defined by Differential Equations.
Omitted in 1892–93.]

COURSE OF RESEARCH.

20*b*. Dr. BÔCHER. — Curvilinear Coördinates and Lamé's Functions.
1 Gr. Total 1.

ENGINEERING.

Primarily for Undergraduates:—

A. Mr. LOVE. — Plane Trigonometry. — Plane Analytic Geometry. — Differential and Integral Calculus. 6 hours. 1 Se., 1 So., 43 Sc. Total 45.

B. Dr. WILLSON. — Practical Astronomy — Determination of time, latitude, and longitude. — Use of the sextant and astronomical transit. — Lectures, instrumental work, and computation. 3 hours. 4 So., 2 Sc. Total 6.

1. Mr. WAIT, Mr. GIBLIN, and Mr. JOHNSON. — Mechanical Drawing. — Descriptive Geometry. — Tinting, Isometric Drawing, Shades and Shadows, Perspective. 6 hours. 2 Gr., 3 Se., 5 Ju., 11 So., 7 Fr., 43 Sc. Total 71.

2. Mr. WAIT and Mr. GIBLIN. — Surveying, Plotting, and Topographical Drawing. — City, Hydrographic, Mining and Geodetic Surveying. — Field Practice. — Johnson's Theory and Practice of Surveying. 6 hours.
2 Gr., 3 Se., 4 Ju., 2 So., 1 Fr., 1 Sp., 25 Sc. Total 38.

3^1. Mr. WAIT and Mr. GIBLIN. — Stereotomy and Machine Drawing. — Applications of Descriptive Geometry to constructions in stone and machinery. — Preparation of Models. 6 hours. 1st half-year.
2 Ju., 1 So., 14 Sc. Total 17.

3^2. Mr. MCCLINTOCK. — Construction and maintenance of Common Roads. 3 hours. 2d half-year. 1 So., 17 Sc. Total 18.

4. Mr. WAIT. — Railroad Surveying, Location, Construction and Maintenance. — Estimates. — Searle's Field Engineering. — Wellington's Economics of Railroad Location. — Field Practice. 6 hours. 9 Sc. Total 9.

For Graduates and Undergraduates:—

5^1. Mr. WAIT. — Rational Mechanics and Graphical Statics. — Stresses in Framed Structures. — Investigation of Arches. — Rankine's Applied Mechanics. — Lectures. 3 hours. 1st half-year
3 Gr., 7 Ju., 2 So. 11 Sc. Total 23.

5^2. Professor BURR and Mr. WAIT. — Resistance of Materials as used for structural purposes. — Testing. — Burr's Elasticity and Resistance of Materials of Engineering. — Lectures and laboratory work. 3 hours. 2d half-year. 3 Gr., 5 Ju., 2 So., 8 Sc. Total 18.

6^1. Professor Burr. — Hydraulic and Wind Motors. — Water-Wheels, Turbines, Water-Engines, and Wind-Wheels. 3 hours. 1st half-year.
4 Sc. Total 4.

[6^2. Professor Burr and Asst. Professor Hall. — Machines. — General Theory and Efficiency. — Steam-Engines and Pumping-Engines. 3 hours. 2d half-year. Given in connection with Physics 7, in 1892–93.]

7^1. Professor Burr. — Water Supply, and Sanitary Engineering. 3 hours. 1st half-year. 1 Se., 9 Sc. Total 10.

7^2. Professor Burr and Mr. Giblin. — Hydraulics. — Flow of Water and Fluids of Varying Density. — Gauging of Streams and Pipes. — Power of Water-Falls. 3 hours. 2d half-year. 6 Sc. Total 6.

8^1. Professor Burr and Mr. Giblin. — Bridges and Buildings. — Plate Girders, Riveted and Pin-Bridges. — Details of Iron and Steel Construction. 6 hours. 1st half-year. 6 Sc. Total 6.

8^2. Professor Burr and Mr. Giblin. — Masonry and Timber Structures and Foundations. — Arches, Dams, Piers, Pneumatic Foundation Work, and Tunnels. 6 hours. 2d half-year. 5 Sc. Total 5.

10. Mr. C. A. Adams. — Dynamo-Electrical Machinery. — Theory and practice in management. 6 hours. 4 Gr., 4 Se., 2 Ju., 1 So., 3 Sc. Total 14.

11. Mr. C. A. Adams. — Industrial Applications of Electricity. — Theory and practice in designing and constructing electrical machinery and electrical apparatus. 9 hours. 1 Gr., 1 Ju., 1 Sc. Total 3.

PHYSICS.

Primarily for Undergraduates: —

A. Professors Trowbridge and B. O. Peirce, and Asst. Professor Hall. — Introductory Lectures. 2d half-year.

B. Asst. Professor Hall and Mr. Hyde. — Experimental Physics. — Lectures (1 hour) and laboratory work.
11 Se., 5 Ju., 14 So., 22 Fr., 7 Sp., 12 Sc. Total 71.

C. Mr. Sabine and Mr. Hormell. — Experimental Physics. — Measurements in Mechanics, Sound, Heat, Light, Electricity, and Magnetism. — Lectures and laboratory work. 3 hours.
1 Gr., 2 Se., 8 Ju., 16 So., 24 Fr., 6 Sp., 24 Sc. Total 81.

1. Professor Hall. — General Descriptive Physics. — Lectures (2 hours) and laboratory work. 8 Se., 7 Ju., 16 So., 9 Fr., 1 Sp., 17 Sc. Total 58.

For Graduates and Undergraduates: —

3. Professor B. O. Peirce, Dr. Willson, and Mr. Kendrick. — Electrostatics, Electrokinematics, and parts of Electromagnetism. — Lectures (1 hour) and laboratory work. 2 Gr., 7 Se., 7 Ju., 9 So., 10 Sc. Total 35

4. Professor Trowbridge. — Electrodynamics, Magnetism, and Electromagnetism. — Lectures (2 hours) and laboratory work.
4 Gr., 4 Se., 3 Ju., 2 Sc. Total 13.

5. Professor Trowbridge. — Light. — A general treatment of Optical Phenomena. — Lectures (1 hour) and laboratory work. 1 Gr. Total 1.

6. Asst. Professor Hall. — Thermodynamics, 2 hours, and laboratory work. 1st half-year. 3 Gr., 1 Se., 2 Ju., 2 So., 3 Sc. Total 11.

7. Asst. Professor Hall. — Heat Engines: the theory of their action and the principles of their economical operation, with practice in managing and testing the steam-engine. — Lectures and laboratory work. 6 hours. 2d half-year. 3 Gr., 1 Se., 2 Ju., 1 So., 6 Sc. Total 13.

Primarily for Graduates: —

9. Professor B. O. Peirce. — The Mathematical Theory of Electrostatics and Electrokinematics. 4 Gr. Total 4.

Courses of Research.

20*a*. Professor Trowbridge. — Spectrum Analysis. 5 Gr. Total 5.

20*c*. Asst. Professor Hall. — Electromagnetism and Heat Conduction. 2 Gr. Total 2.

CHEMISTRY.

Primarily for Undergraduates: —

A. Professor Cooke. — Elementary Chemistry (lectures). 1 hour. 1st half-year. 1 Se., 3 Ju., 31 So., 390 Fr., 26 Sp., 23 Sc. Total 474.

B. Mr. Torrey. — Experimental Chemistry. — Lectures (2 hours) and laboratory work (2½, or if taken as a full course, 5 hours a week). 1 Gr., 3 Se., 1 Ju., 15 So., 22 Fr., 3 Sp., 9 Sc. Total 54.

1. Professor Jackson. — General Descriptive Chemistry, including its applications in the arts, and embracing the scheme of the chemical elements. — Lectures (2 hours) and laboratory work. 11 Se., 16 Ju., 34 So., 17 Fr., 5 Sp., 46 Sc. Total 129.

2*a*. Dr. Huntington. — 1st half-year: Mineralogy of common rocks, including a study of the characters and distribution of the mineral species constituting ordinary rock. — 2d half-year: Metallic Ores, including blow-pipe assaying and the simpler methods of furnace assaying of gold and silver ores. — 3 hours and laboratory work. 1 Gr., 5 Se., 3 Ju., 4 So., 2 Fr., 1 Sp., 6 Sc. Total 22.

2. Dr. Huntington. — Systematic Mineralogy. — Lectures in the Mineral Cabinet. 3 hours and practical exercises. 1 Gr., 5 Se., 5 Ju., 7 So., 2 Fr., 1 Sp., 13 Sc. Total 34.

3. Professor H. B. Hill. — Qualitative Analysis (chiefly laboratory work, about nine hours a week). 3 Gr., 16 Se., 4 Ju., 5 So., 2 Fr., 3 Sc. Total 33.

4. Professor Cooke, and Dr. Richards. — Quantitative Analysis (chiefly laboratory work, about nine hours a week). 2 Gr., 2 Se., 6 Ju., 3 So., 4 Sc. Total 17.

For Graduates and Undergraduates: —

4*a*. Dr. Richards. — Quantitative Analysis (second course). — Laboratory work. 3 hours. 2 Se., 2 Ju., 2 Sc. Total 6.

5. Professor H. B. Hill. — The Carbon Compounds. — Lectures, (3 hours,) and laboratory work. 3 Gr., 4 Se., 4 Ju., 3 Sc. Total 14.

8. Professor Cooke. — Chemical Philosophy. 1 hour. 3 Gr., 8 Se., 2 Ju., 1 So., 2 Sc. Total 16.

Primarily for Graduates: —

6. Professor COOKE. — Advanced Problems in Inorganic Chemistry and Chemical Physics, including Molecular Weights and Volumes, Thermo-Chemistry, and Specific Refractive Power. — Lectures, (3 hours) and laboratory work. 1 Gr., 5 Se., 1 Ju., 1 Sc. Total 8.

7. Professor COOKE. — Crystallography and the Physics of Crystals. — Lectures and Practical Exercises. — Discussion and measurement of crystals. — Crystal Optics. 3 Gr., 2 Se. Total 5.

COURSES OF RESEARCH.

20. (*a*) Professor COOKE. — Determination of Atomic Weights. 1 Gr., 2 Se. Total 3.
(*b*) Professor JACKSON. — Aromatic Compounds. 4 Gr. Total 4.
(*c*) Professor H. B. HILL. — Organic Chemistry. 2 Gr., 1 Se., 1 Sc Total 4.
(*e*) Professor COOKE and Dr. HUNTINGTON. — Mineralogy. 1 Gr. Total 1.

BOTANY.

Primarily for Undergraduates: —

1. Professor GOODALE and Mr. GANONG — Botany. — Lectures and laboratory practice. 3 hours. 2d half-year. 1 Gr., 11 Se., 22 Ju., 48 So., 63 Fr., 14 Sp., 31 Sc. Total 185.

2. Asst. Professor THAXTER. — Morphology of Plants. — Lectures and laboratory work. 3 hours. 1st half-year. 3 Gr., 6 Se., 8 Ju., 9 So., 9 Sc. Total 35.

For Graduates and Undergraduates: —

3. Professor GOODALE and Mr. GANONG. — Botany (second course). — Lectures and laboratory practice. 3 hours. 3 Gr., 3 Se., 1 Ju., 3 So., 1 Sp., 4 Sc. Total 15.

4. Asst. Professor THAXTER. — Cryptogamic Botany. — Lectures and laboratory work. 3 hours. 2d half-year. 1 Gr., 3 Se., 1 So., 4 Sc. Total 9.

Primarily for Graduates: —

COURSES OF RESEARCH.

20*a*. Professor GOODALE and Mr. GANONG. — Structure and Development of Phanerogams. — Experimental Vegetable Physiology. — Systematic, Economic, and Medical Botany. 4 Gr., 1 Se., 1 Ju. Total 6.

20*b*. Professor FARLOW. — Structure and Development of Cryptogams. 6 Gr., 2 Se., 1 Sc. Total 9.

ZOÖLOGY.

Primarily for Undergraduates: —

1. Professor MARK. — Zoölogy. — Lectures and laboratory demonstrations. 3 hours. 1st half-year. 3 Gr., 7 Se., 7 Ju., 23 So., 23 Fr., 7 Sp., 20 Sc. Total 90.

2. Dr. C. B. DAVENPORT. — Morphology of Animals. 3 hours. 2d half-year. 5 Gr., 6 Se., 5 Ju., 9 So., 1 Fr., 11 Sc. Total 37.

For Graduates and Undergraduates: —

3. Dr. C. B. Davenport. — Comparative Anatomy of Vertebrates. — Lectures and laboratory work. 3 hours. 5 Gr., 8 Se., 3 Ju., 1 So., 4 Sc. Total 21.

4. Professor Mark and Dr. Woodworth. — Microscopic Anatomy. — Lectures and laboratory work. 3 hours. 1st half-year. 4 Gr., 6 Se., 1 Ju., 4 Sc. Total 15.

5. Professor Mark. — Embryology of Vertebrates. — Lectures and laboratory work. 3 hours. 2d half-year. 4 Gr., 5 Se., 1 Ju., 3 Sc. Total 13.

Primarily for Graduates: —

Courses of Research.

20*a*. Professor Mark. — Anatomy and Development of Animals. 12 Gr. Total 12.

20*c*. Dr. Slade. — Comparative Osteology. 2 Gr., 1 Se., 1 Sc. Total 4.

GEOLOGY.

Primarily for Undergraduates: —

1. Professor Davis and Mr. Ward. — Meteorology. — Lectures, recitations, written exercises and laboratory work. 4 hours. 1st half-year. 18 Ju., 17 So., 32 Fr., 2 Sp., 4 Sc. Total 73.

2. Professor Davis and Mr. Ward. — Physical Geography. — Lectures, recitations, written exercises, and laboratory work. 4 hours. 2d half-year. 2 Se., 17 Ju., 14 So., 45 Fr., 7 Sp., 13 Sc. Total 98.

4. Professor Shaler, Mr. Dodge, and Mr. Griswold. — Elementary Geology. — Lectures, recitations, and field excursions. — Dana's Manual of Geology. 3 hours. 1 Se., 25 Ju., 61 So., 69 Fr., 16 Sp., 40 Sc. Total 212.

5. Dr. Harris and Mr. Ladd. — Elementary Geology. — Laboratory and field exercises, with occasional lectures. 4 hours. 5 Ju., 6 So., 15 Fr., 1 Sp., 21 Sc. Total 48.

For Graduates and Undergraduates: —

8. Professor Shaler, Asst. Professor Wolff, and Mr. Woodworth. — General Critical Geology. — Lectures, field work, theses, and library work. 2 hours. 6 Gr., 6 Se., 6 Ju., 4 So., 8 Sc. Total 30.

9. Dr. Harris. — Structural and Dynamical Geology of the stratified rocks. — Lectures, library work, and theses. 2 hours. 2 Gr., 2 Se., 1 Ju., 1 Sp., 2 Sc. Total 8.

12. Asst. Professor Wolff. — Petrography. — Lectures (2 hours), laboratory work, and theses. 2 hours. 6 Gr., 6 Se., 1 Ju., 4 Sc. Total 17.

14. Professor Shaler and Dr. Jackson. — Palaeontology. — Lectures (2 hours), laboratory work, and theses. 6 Gr., 7 Se., 2 Ju., 8 Sc. Total 23.

15. Professor Shaler and Dr. Jackson. — Historical Geology. — Laboratory work (1 hour) and theses. 3 Gr., 2 Sc. Total 5.

[18. Professor Whitney. — Economical Geology. Lectures, reading and theses. Omitted in 1892–93.]

Primarily for Graduates: —

COURSES OF RESEARCH.

20. Professor DAVIS. — Physical Geography and Meteorology (second course). — Lectures and reports. 2 hours. 5 Gr., 2 Se., 2 Ju., 3 Sc. Total 12.

22. Professors SHALER and DAVIS, Asst. Professor WOLFF, and Dr. HARRIS. — Advanced geological field work. Field and library work, with weekly conferences. 6 Gr., 6 Se., 3 Ju., 4 Sc. Total 19.

23. Asst. Professor WOLFF. — Petrographical research in the field and laboratory. 1 Gr., 2 Se., 2 Sc. Total 5.

24. Professor SHALER and Dr. JACKSON. — Palaeontology. 1 Gr. Total 1.

25. Professor WHITNEY. — Mineral Veins and Metalliferous Deposits: their mode of occurrence, and theories of their origin. Lectures, reading and theses. 1 hour and laboratory work. 3 Gr., 13 Se., 4 Ju., 2 So., 1 Sp., 4 Sc. Total 27.

26. Professor WHITNEY. — Geographical methods and results. 1 hour. 3 Gr., 6 Se., 1 Ju., 2 So., 1 Sp. Total 13.

AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

For Graduates: —

Professor PUTNAM. — Course of special training and research. 2 Gr. Total 2.

ANATOMY, PHYSIOLOGY, AND PHYSICAL TRAINING.

This course to count towards the degree of S.B. but not towards the degree of A.B.

1. Dr. G. W. FITZ. — The Elementary Physiology and Hygiene of Common Life. — Personal Hygiene. — Emergencies. — Laboratory work. 2 hours. 8 Sc. Total 8.

SUMMER COURSES OF INSTRUCTION.

Courses which may be counted for the degrees of A.B. or S.B: —

ENGINEERING.

S1. Mr. WAIT. — Surveying, Plotting, and Topographical Drawing. — Johnson's Theory and Practice of Surveying. — Geodesy. 6 hours for 6 weeks. Half-course. 1 Gr., 1 Se., 1 Sp., 2 Sc. Total 5.

S2. Mr. WAIT. — Levelling. — Topographical Drawing. — Searle's Field Engineering. — Railroad Surveying, Location, and Construction. 6 hours for 6 weeks. Half-course. 3 Sc. Total 3.

S3. Mr. WAIT. — Draughting and Descriptive Geometry. — Problems in Geometrical Drawing. — Isometric Drawing. — Perspective. 6 hours for 6 weeks. Half-course. [For the degree of S.B. only.] 1 So., 1 Sp. Total 2.

PHYSICS.

S2. Mr. SABINE. — Experimental Physics. — Measurements in Mechanics, Sound, Heat, Light, Electricity, and Magnetism. — Laboratory work. 6 hours for 6 weeks. Half-course. 2 Ju., 2 Sc. Total 4.

BOTANY.

S1. Mr. **GANONG**. — Vegetable Morphology and Physiology. — Laboratory work on Morphology and Histology. — Demonstrations on Physiology. — Lectures. 5 hours for 5 weeks. Half-course. 2 Se. Total 2.

GEOLOGY.

S1. Dr. **HARRIS** and Mr. **KUMMEL**. — Elementary course in general physical and structural Geology: at Cambridge. Lectures, laboratory and field-work. 5 hours for 6 weeks. Half-course. 3 Ju., 1 Fr., 3 Sc. Total 7.

S2. Dr. **HARRIS** and Mr. **KUMMEL**. — Advanced course in geological field-work: at Utica, N. Y., Catskill, N. Y., and Meriden, Conn. 6 weeks. Half-course. 2 Gr., 2 Se., 3 Ju., 4 Sc. Total 11.

S3. Professors **SHALER** and **DAVIS** and Asst. Professor **WOLFF**. — Training in field-research, and in the methods of professional geological field-work, the results to be presented in a thesis: for advanced students. 6 weeks. Half-course. 1 Gr., 1 Se., 2 Ju., 1 Sc. Total 5.

Among the changes made in the list of studies for 1893–94 are two which have been called for by the increasing importance of the method of Seminary instruction, by which the most advanced students in several branches of study now receive valuable training. In Semitic Languages and History the voluntary meeting of instructors and students, hitherto called the Semitic Conference, has been organized as a Seminary, with regularly assigned work in comparative study and research, and is now rated as a half-course in preparation for a degree. In Classical Philology also, it has been found desirable to establish a half-course in text criticism and interpretation, to be given by Assistant Professor Morgan, and to serve as an introduction to the Seminary of Classical Philology.

It may be noted also that the course in the History of Latin Literature, given by Professor Smith, has been divided so as to present the Poetry and Prose in alternate years and thus allow a fuller treatment of each. In English Composition an interesting experiment has been undertaken, by establishing for students in the Lawrence Scientific School a course, to be given by Mr. Hurlbut, for the purpose of affording some training in descriptive writing for scientific purposes. In Philosophy a second introductory course has been established, in which the discussions of Logic, Psychology and Ethics, are to be grouped around a sketch of the history of Philosophy, so that the large number of students beginning their studies in this department may have their choice between two modes of approach to the main body of their work. In the rearrangement of work upon the return of Professor James from a year's leave of absence, the course in Psychology is divided between Professors James and Münsterberg, a course in the History of Psychology is offered by Professor Royce, and laboratory and seminary work in the same subject is also offered by Professors Münsterberg and James. In Fine Arts, Professor Norton's absence on leave causes the suspension of his courses and the substitution of two half-courses, given respectively by Mr. Edward Robinson and by Assistant Professor Moore. A course upon Architecture has also been established, to be given by Mr. H. L. Warren. In Government and Law, a course in the Principles of the Common Law has been established, to be given by Mr. E. L. Conant, as an aid to students in History and Political Science and as a valuable disciplinary study. In Economics it has been found advisable to extend the scope of the course in Economic History, and for this purpose the course known as Economics 4, in which the period for survey began at the middle of the eighteenth century, has been discontinued, and a new course covering the time from the Middle Ages down has been established under Professor Ashley. In Engineering the time given to Rational Mechanics and Resistance of Materials has been doubled by requiring daily exercises in the two half-courses already existing.

Attention is also called to courses provided for the year 1893–94, as follows: —

Pāli. Provision for both a beginner's and an advanced course. Professor LANMAN.

Greek. Sophocles, — his works, and topical studies. Professor WRIGHT.

Latin. Roman Stoicism under the Early Empire. *Half-course.* Mr. PARKER.

Early English. Langland and Gower. *Half-course.* Dr. GARRETT.

French. Difficult Modern French. *Half-course.* Professor BÔCHER.

History and Sources of Canon Law, and Protestant Ecclesiastical Law. *Half-course.* Professor EMERTON.

International Payments and Flow of the Precious Metals. *Half-course.* Professor DUNBAR.

Ideal Social Reconstructions. *Half-course.* Professor CUMMINGS.

The Development of Land Tenure in Europe. *Half-course.* Professor ASHLEY.

Zoölogy. Experimental Morphology. *Half-course.* Dr. C. B. DAVENPORT.

Nervous System and Organs of Special Sense. *Half-course.* Dr. G. H. PARKER.

Mining Geology. *Half-course.* Mr. SMYTHE.

Geological Surveying. *Half-course.* Mr. SMYTHE.

The experiment of allowing summer courses, pursued under specified conditions, to be counted towards the Bachelor's degree, was extended for the summer of 1893–94 to courses established in French, History, and Mathematics. The resort to such courses by candidates for a degree, however, does not yet show any strong disposition on the part of our students to use the summer vacation in this manner, and the summer schools continue to be chiefly important for their service to teachers and students having only a casual connection with the University, leaving the more effectual use of our great equipment during an important fraction of the year by the candidates for our degrees, still a problem for careful consideration and experiment.

In my last report a full statement was made of the difficulties which had arisen in applying those clauses of the Standing Votes of the Corporation and Overseers which require that candidates for the degree of A.M shall not only have qualified themselves for the degree of A.B., but shall already have taken it; and it was shown that, after every effort to bring all cases within the lines fixed by the Standing Votes, it must be expected that exceptional cases would arise, in which equity would require that the two degrees should be conferred simultaneously. The intention of the governing boards to insist upon a strict compliance with the Standing Votes was made known, and all applications for relaxation of the above rule were closely scrutinized. Nevertheless, at the end of the year, four cases presented themselves, in which work of proper kind and quality for the Master's degree had been completed by students who at the beginning of the year had not received the Bachelor's degree, and under circumstances which appeared to the Faculty to merit consideration. Two of these were students who at Commencement in 1892 had still unfinished a small amount of work required for the degree of A.B. Both were students who had been admitted to advanced standing. In one case the deficiency was caused by the failure of the student to receive seasonable notice of work required of him by the Faculty to qualify him for graduation here, and in the other a half-course in English composition was the deficiency still to be made up, the student being 26 years of age and engaged in advanced work. In these cases, all deficiencies having been made up in the year 1892–93, the Faculty recommended both students for the degree of A.B. as of 1892, and also for the degree of A.M. which had been earned in the year 1892–93. The other two cases presented were those of students who had been for four years in Harvard College and at the end of the third year had qualified themselves as regards the amount and quality of their work, for the degree of A.B. *magna cum laude*, one of them being aided in this undertaking by additional studies to the amount of half a year's work, presented at admission. For different reasons these two students had preferred not to graduate, as they could have done, with the class of 1892, but having remained in College and taken advanced studies, which were pursued with high credit, finally asked at Commencement, 1893, to receive the degree of A.B. and that of A.M., both of 1893. There having been in both cases a substantial compliance with all requirements for the two degrees except the actual reception of the Bachelor's degree in 1892, and the preference of a student for graduation in his own class appearing reasonable, the Faculty recommended the relaxation of the rule as requested; but this recommendation was not approved by the Corporation, and the two students in question therefore received the degree of A.B. in 1893, but not the degree of A.M.

The two cases last described, in their present position, represent a class which may be expected to arise from to time, the disposition of which under the Standing Votes of the Corporation and Overseers presents some difficulty. The Standing Votes authorize the recommendation of candidates otherwise properly qualified who "after taking the Bachelor's degree, shall have pursued for at least one year at the University" an approved course of study, plainly intending that the Bachelor's degree shall have been actually taken before the year of residence for the Master's degree shall begin. The expediency of this provision as a general rule is unquestioned; but in cases where the Bachelor's degree has not been taken, either, as in the above cases, because the student desired still to graduate with his own class, or, as sometimes happens, because he was prevented from taking it by illness or other unavoidable hindrance, and has then devoted a distinct year of residence to graduate studies, is he to be cut off from the Master's degree unless he gives for it a second year of residence and study, — a second year required only in order that there may be unvarying compliance with the rule that work for the Master's degree shall *follow* the actual taking of the Bachelor's degree? In such cases equity seems to require that upon satisfactory reasons being shown for the failure to take the Bachelor's degree when it was earned, further residence after the completion of the additional year of study required for that of Master should be dispensed with. The two degrees could then be given in successive years, each being received a year after it had been earned, and each having its distinct period of residence and study.

The question which arises in the cases just described is after all but one of a varied succession of questions of administration arising under the Standing Votes, and demonstrating more and more clearly, year by year, the difficulties of proceedure under a code of regulations devised many years ago, for an entirely different state of things from that which now exists. Attention was called to this subject in the last annual reports of the Dean of the Faculty and the Dean of the

Graduate School. The Faculty also took it under consideration in the course of the last year, with a view to the general question, what revisions of the Standing Votes, if any, should be recommended to the governing boards.

In approaching this inquiry the Faculty were unanimous in their desire to maintain the standard and advance the dignity of the degrees which are the subject of the Standing Votes. They were also aware that there could be no possible doubt as to their entertaining this desire, since in the administration of these degrees for the last twenty years the actual requirements have been materially increased by the steady policy of the Academic Council and the Faculty, and now stand on higher and far more solid ground than at the start, having reached a point which was at first thought by not a few to be unattainable. The Faculty were also unanimous in the desire to exclude from their field of inquiry all questions touching the requirements for the Bachelor's degree, or the policy to be pursued with respect to the length of the College course.

Proceeding to an examination of the Standing Votes in their present form (see pp. 85, 86) the Faculty were impressed by the palpable evidence that the Votes were prepared to meet conditions which have now passed away, in a University differently organized and developed from the Harvard University of to-day. That the Votes throughout state the powers and duties of three bodies, the Academic Council, the College Faculty, and the Faculty of the Lawrence Scientific School, all of which have ceased to exist, is a defect easily remedied. Far more important is the fact, that the leading purpose of the Votes obviously is to *create* and settle the standing of the degrees of Doctor of Philosophy and Doctor of Science and of the degree of Master of Arts to be given upon examination. These three degrees are now formally established by section 9 of the Statutes as ordinary degrees of the University, and after the practice of twenty years have their standing and significance as distinctly and firmly settled as any other of the ordinary degrees. In 1872 it was important, for the success of the higher instruction then undertaken, that the meaning of these degrees should be defined by the authoritative act of all the boards of the University, and such was the opinion of the officers of instruction who then assisted in the preparation of the Standing Votes. To-day, however, a tradition has been established, and the degrees have secured a recognized value, which has plainly superseded the necessity for their continued definition in this form. The Faculty were of opinion, therefore, that the time had come when the Standing Votes could at any rate be greatly simplified, by reducing them to those particulars in which some present useful purpose should be secured. In the process of simplification it appeared to the Faculty that Vote 1 must be regarded as superseded by the statutes as noted above; that Vote 8 authorizes a practice which, having once been established, is now found too useful and convenient, to require any rule for its maintenance; that Vote 9 is obsolete, since the formerly existing "courses of instruction in Harvard College" are now absorbed in the courses provided by the Faculty of Arts and Sciences, which by the statutes has charge of the Graduate School as well as of Harvard College; and that Vote 11 has been annulled by the vote passed in June, 1892, on the recommendation of the University Council, declaring it inexpedient to give the degree of A.M. in connection with any other degree.

Votes 2 and 3, opening the higher degrees to Bachelors of Arts or of Science of Harvard University and to those holding from other universities degrees rated as the equivalent of the A.B. or S.B. of Harvard, or to be made equivalent by additional work, in their present form have long been found to make a practically impossible demand, by requiring that any Bachelor of Arts or of Science coming from another institution shall show "by examination" that his degree is equivalent to that of Harvard, and in case it is found deficient shall pass "such additional examinations" as may be prescribed. The method of examination in these cases was prescribed when the ground was untried and the number of applicants small. With the growth of the Graduate School, however, it has become plainly impossible to conduct a set of examinations covering the qualifications for the degree of A.B. in the great number of colleges from which graduate students come. It has been found moreover in practice to be not only easier, but fairer and more courteous to sister institutions of learning, to charge a committee with the business of rating the degrees held by applicants according to the courses of study and reputed standard of each institution, and the certified proficiency of each applicant, and then to require the applicant to make good the amount by which he is held to fall short of the Harvard A.B. by pursuing here the requisite number of courses, one or two, or a whole year's work as the case may be, thus completing his qualifications as a candidate under our own instructors. In this way, it is believed the object aimed at by the Standing Votes is more effectually secured than it could be by the method of examination originally prescribed. The Faculty also found as a result of some experience that the requirements of the specified degrees of A.B., S.B., or Ph.B. from all candidates must in some cases exclude applicants equally well qualified, but holding degrees or certificates not answering to these descriptions. It appeared to the Faculty then that Votes 2 and 3, defining the classes of persons to whom the higher degrees are open, might be advantageously recast, in such forms as simply to open the degrees to graduates in Arts or Sciences of Harvard, and such other persons as shall satisfy the Faculty that they can properly be placed on the same footing, or shall complete their qualifications under the direction of the Faculty.

The fourth, fifth, and sixth Votes prescribe the terms on which candidates, otherwise properly qualified, may be recommended for the higher degrees, giving in each case the leading place to a requirement of residence, — for the degree of Ph.D. two years of study in this University, for that of S.D. two years in this University and in some cases three years of scientific study, and for the degree of A.M. at least one year in this University. These requirements, it is well known, were originally inserted at a time when there was but little resort to Harvard University for graduate study, and when the creation of a class of resident students and of a certain atmosphere of advanced scholarship was an important object. The requirements have answered this purpose. Graduate students have been brought to Cambridge in great and rapidly increasing numbers, every branch of study now feels a stimulating influence from their presence, and the experiment of 1872 has had for its result the establishment of a permanent department of the University, enjoying a national reputation. The leading object of the requirements of residence in Votes 4 and 5 having been gained then, the Faculty were led to believe that all the higher degrees could now be left with entire safety to the protection of section 9 of the Statutes, which prescribes a minimum of one year of residence for all the ordinary degrees of the University. The exclusion of the present requirements of two years of residence for the degree of Ph.D. and S.D. and of a three year's course of study in some cases for the latter, would have the effect, it is believed, to raise the dignity of these degrees by making them rest plainly upon scholarly attainment, not weakened or confused by the suggestion of a time requirement, and would remove a cause of frequent and often mischievous misconception among students, from whose minds it is sometimes difficult to eradicate the notion that, for example, the degree of Ph.D. represents merely a year of additional study after taking the A.M. In point of fact, it is safe to say that the qualification for the two doctorates is now so high, that the time requirements in the Standing Votes are practically no index of the time really needed for securing one of the higher degrees in any actual case. Those requirements do, however, have an injurious effect upon a class of cases not foreseen when the Votes were adopted, but now of some importance, — the cases where students who have made some progress in advanced studies elsewhere wish to complete their work and take their degrees in this University, or in which graduate students at work here find it for their advantage for a time to carry on some portion of their studies elsewhere. This practice of enabling the advanced student, when preparing for his degree, to draw from the resources of different seats of learning as his special needs may require, is common in European universities and is plainly for the advantage of American scholarship. It is left open for our own graduates by Vote 10, which permits that for Bachelors of Arts, Science, Law, or Divinity, of Harvard University, the requirements of residence or study here as the condition of receiving a higher degree may be dispensed with; but it is not open to persons graduating elsewhere and seeking a higher degree here. That the Graduate School should thus be the only department of the University in which a candidate for a degree is forbidden to enter in advance, is a result of the earlier policy, already adverted to as having served a purpose when the number of graduate students was small, but having now no claim for continuance.

Votes 4, 5, and 6, besides their requirements as to time in the case of the doctorates, also contain some provisions as to the examination of candidates for all the higher degrees, the presentation of theses for the doctorates, and the requirement of special scientific attainments by candidates for the S.D. A little examination of the Annual Catalogue (see particularly pp. 272 to 274 of the Catalogue for 1892–93) or an inquiry into the practice of the Academic Council and of its successor, the Faculty of Arts and Sciences, will show that these provisions in the Standing Votes are exceeded in stringency by the demands systematically enforced by the examining authorities for many years. The higher degrees are in fact protected and their present standard maintained, no longer by the provisions of the Standing Votes, but by the growing sense of responsibility among those who recommend candidates and whose reputation, collective and individual, is drawn into question by any recommendation made on insufficient grounds. There remains the provisions in Vote 4, enumerating the "departments" in which the degree of Doctor of Philosophy is to be conferred. This enumeration has once been amended and is still extremely imperfect, obviously not conforming to the natural divisions of University study, and having no relation to the grouping of instruction which the present more complete organization of the departments and divisions of the Faculty has brought about. Necessary originally as a part of the definition of the doctor's degree, it has apparently become unnecessary and, if strictly followed, even injurious.

It appeared therefore to the Faculty, in view of the provision made by the Statutes for a minimum term of residence for all ordinary degrees, and of the existence of a firmly established practice and standard observed in testing the candidates for the degrees of A.M., Ph.D., and S.D., that no part of Votes 4, 5, or 6, needs to be preserved in a revision of the Votes. And this opinion was confirmed by the consideration that, in the case of all other ordinary degrees provided for by the Statutes, including the three others for which the Faculty of Arts and Sciences itself makes recommendations, the whole matter of specific regulation is left to the responsibility of the Faculty concerned, which shapes its practice as experience requires, under the supervision of the governing boards.

Coming finally to Vote 7, providing the degree of A.M. for candidates who, after taking the degree of LL.B., D.B., or M.D., shall pursue for one year at the University a course of study in Law, Divinity, or Medicine, the Faculty recalled the fact that this provision was made before the courses of study in the Law and Medical Schools had been lengthened, and before the larger part of the courses in the Divinity School had been adopted as courses under the Faculty of Arts. These changes have deprived Vote 7 of the importance once attached to it, as an inducement for further study in the professional schools, and have led to the practical disuse of this mode of access to the Master's degree. The Faculty came to the opinion therefore that this Vote also might well be omitted in a revision of the Standing Votes.

It also seemed to the Faculty expedient that a new section should be added to the Votes, to the effect that recommendations for the ordinary degrees of A.M., Ph.D. or S.D. are made by the Faculty of Arts and Sciencies. Section 9 of the Statutes declares that the ordinary degrees there enumerated are conferred "after recommendation by the several Faculties." The three degrees in question having formerly been under charge of the Academic Council, in which all of the Faculties were present, the question has been mooted whether these degrees have fallen to the exclusive jurisdiction of the Faculty of Arts and Sciences since the organization of this Faculty in 1890. The question may not be of serious importance, but a clear statement on the point seemed to the Faculty to find a natural place in a revision of the Votes. The Faculty also proposed to add a provision that no person shall be recommended for the degree of A.B. and A.M. at the same time, in order to give formal expression to the evident intention of Vote 6 in this respect, and to the present purpose of the Corporation and Overseers communicated to the Faculty in 1892.

The form which, in the opinion of the Faculty, the Standing Votes might take, when stripped of provisions which are obsolete, unnecessary, or shown by experience to be injurious, and reduced to a set of provisions which are sufficient to maintain the higher degrees at their present standard, is subjoined, together with the Votes as they now stand.

CHARLES F. DUNBAR, *Dean.*

The following are the present Standing Votes of the Corporation and Overseers relating to the degrees of A.M., Ph.D., and S.D.: —

1. That the degrees of Doctor of Philosophy and Doctor of Science be established in Harvard University.

2. That the degrees of Master of Arts and Doctor of Philosophy be open to Bachelors of Arts of Harvard College, and to Bachelors of Arts of other colleges who shall have satisfied the College Faculty by examination that the course of study for which they received the Bachelor's degree is equivalent to that for which the Bachelor's degree is given in Harvard College, or shall have passed such additional examinations as that Faculty may prescribe.

3. That the degree of Doctor of Science be open to Bachelors of Science of Harvard University, and to Bachelors of Science and Bachelors of Philosophy of other institutions who shall have satisfied the Faculty of the Lawrence Scientific School by examination that the course of study for which they received the Bachelor's degree is equivalent to that for which the degree is given in Harvard University, or shall have passed such additional examinations as that Faculty may prescribe.

4. That the Academic Council be authorized to recommend for the degree of Doctor of Philosophy candidates otherwise properly qualified, who, after taking the Bachelor's degree, shall have pursued at Harvard University for two years a course of liberal study, approved by the Academic Council, in any one of the following departments: Philology, Philosophy, History, Political Science, Mathematics, Physics, Natural History [or Music], — shall have passed a thorough examination on that course, and shall have presented a satisfactory thesis.

5. That the Academic Council be authorized to recommend for the degree of Doctor of Science candidates otherwise properly qualified, who, after taking their Bachelor's degree, shall have resided at least two years at the University, and have pursued during three years a course of scientific study, embracing at least two subjects, and approved by the Academic Council, and shall have passed a thorough examination upon that course, showing in one of the subjects special attainments, and shall have also made some contribution to science or some special scientific investigation [to be embodied in a thesis]; provided, however, that a course of study of two years only shall be required of candidates who are both Bachelors of Arts and Bachelors of Science of Harvard University.

6. That the Academic Council be authorized to recommend for the degree of Master of Arts candidates otherwise properly qualified, who, after taking the Bachelor's degree, shall have pursued for at least one year at the University a course of liberal study approved by the Academic Council, and shall have passed [with high credit an *] examination on that course. [The Council will designate,

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* The words "with high credit an," are an amendment for "a thorough."

from time to time, those courses of instruction in the Professional and Scientific Schools which will be approved by it for the degree of A.M.]

7. That the Academic Council be authorized to recommend for the degree of Master of Arts candidates otherwise properly qualified, who shall pursue at the University for at least one year, after taking the degree of Bachelor of Laws, Bachelor of Divinity, [or Doctor of Medicine,] in Harvard University, a course of study in Law, Theology, [or Medicine,] approved by the Academic Council, and shall pass a thorough examination on that course.

8. That the Academic Council be authorized, in examining the qualifications of candidates for degrees, to procure the assistance of officers of instruction and government, who are not members of the Council.

9. To open the elective courses of instruction in Harvard College to Bachelors of Arts.

10. That for Bachelors of Arts of Harvard College and Bachelors of Science, Laws, and Divinity of Harvard University, residence or study at the University may be partly or wholly dispensed with at the discretion of the Academic Council as a condition for receiving a higher degree.

11. The degree of Doctor of Philosophy carries with it that of Master of Arts; the full title of the degree being Doctor of Philosophy *and* Master of Arts.

NOTE. — The words enclosed in brackets in the above votes indicate amendments. The following are the dates at which these votes and amendments were passed by the President and Fellows, and concurred in by the Board of Overseers: —

The first nine votes (unamended) were passed 18 December 1871; and the Overseers concurred 10 January 1872. The tenth vote was passed 29 January 1872; and the Overseers concurred 31 January 1872. The eleventh vote was passed 14 May 1877; and the Overseers concurred 14 June 1877. The amendment to the fourth vote was adopted 1 March 1875; concurrence, 24 March 1875. That to the fifth vote was adopted 8 July 1878; concurrence, 10 July 1878. Those to the sixth vote were adopted 29 May 1882; concurrence, 8 June 1882. No record is found of any change in the seventh vote; although it appears in the amended form stated above in the Catalogue for 1874–75, and was thereafter so administered by the Academic Council.

The following is a revised form of the Standing Votes, embodying the changes considered by the Faculty of Arts and Sciences, as stated in the above report: —

1. Recommendations for the ordinary degrees of Master of Arts, Doctor of Philosophy, and Doctor of Science, under section 9 of the Statutes, are made by the Faculty of Arts and Sciences.

2. The degrees of Master of Arts and Doctor of Philosophy, are open to Bachelors of Arts of Harvard University, and to such other persons as shall satisfy the Faculty that they have pursued studies qualifying them to be placed on the same footing with Bachelors of Arts of Harvard University, or shall complete their qualification by pursuing such additional studies as the Faculty may require; but no person shall be recommended for the degrees of Bachelor of Arts and Master of Arts at the same time.

3. The degree of Doctor of Science is open to Bachelors of Science of Harvard University, and to such other persons as shall satisfy the Faculty that they have pursued studies qualifying them to be placed on the same footing with Bachelors of Science of Harvard University, or shall complete their qualification by pursuing such additional studies as the Faculty may require.

THE COLLEGE.

To the President of the University:

Sir, — I have the honor of sending you a report on the condition of Harvard College during the academic year 1892–93.

The number of students at the beginning of the year was fifteen hundred and ninety-eight: —

Seniors	327
Juniors	328
Sophomores	385
Freshmen	409
Total number of undergraduates	1449
Special Students	149
Total	1598

These figures show a gain of one hundred and forty-two over the preceding year: —

	Gain.	Loss.
Seniors	56	..
Juniors	24	..
Sophomores	54	..
Freshmen	28	..
Special Students	..	20
Total gain	162	
Total loss	20	
Net gain	142	

One Junior and one Special Student died before the end of the academic year.

Three hundred and thirty-eight students received in June the degree of Bachelor of Arts. Ten of these were from the Junior class, and sixteen from the Graduate School. The losses and the gains in the three younger classes between November, 1892, and November, 1893, may be learned from the following tables: —

	November, 1892.		Loss.	Gain.	November, 1893.	
Class of 1894	(Juniors)	328	53	48	(Seniors)	323
Class of 1895	(Sophomores)	385	63	30	(Juniors)	352
Class of 1896	(Freshmen)	409	66	51	(Sophomores)	394
			182	129		
Net loss in the three classes between Nov., 1892, and Nov., 1893						53

	Class of 1894.	Class of 1895.	Class of 1896.	Total for three Classes.
Losses.				
Left College before the end of the year	8	11	23	42
Left College at the end of the year	25	17	9	51
Were "dropped" and left College	1	1	6	8
Entered a lower class	9	16	23	48
Entered a higher class	10	18	5	33
Total loss	53	63	66	182
Gains.				
From higher classes	..	9	15	24
From lower classes	18	5	..	23
Newly admitted	30	16	36	82
Total gain	48	30	51	129
Net loss	5	33	15	53

More men left the College than in the preceding year; and other colleges sent fewer recruits: yet, though the lack of money throughout the country has shrunk some of our classes, the total number of students is larger than ever before.

The next table shows the losses and the gains in the number of Special Students since December, 1892: —

In attendance, December, 1892	149
Left College before the end of the year	23
Left College at the end of the year	50
Entered a College class	13
Total loss	86
Returned to College as Special Students, 1893	63
Newly admitted	99
In attendance, November, 1893	162
Net gain	13

The Special student is a transient guest: he is admitted on trial; and he cannot come back for a second year unless formally admitted again. Sometimes he is a mature man who wishes to devote a year or more to a single study; sometimes he is a youth unable to complete his preparation for College, but eager for College life and for an opportunity to make up his deficiencies. The committee in charge of Special Students will not admit a youth at once untrained and lazy; and it sends away, or refuses to readmit a student who proves undeserving.

The Freshman class is again remarkably large: —

Admitted by examination in 1893	383
before 1893	9
from other colleges	2
from the class of 1896	22
from the Special Students	2
readmitted after failure to complete the Freshman year	7
Total	425

Forty-five candidates who took some of their Final Examinations in June did not take the remainder in September. Besides these, four hundred and ninety-three took Final Examinations. Of the four hundred and ninety-three, three hundred and fifty-five already had Preliminary certificates; seventy-seven divided the examinations between June and September; thirty-one took all their examinations in June; and thirty took all in September. The tables that follow show in detail the result of the Final Examinations. The percentage of rejection in September is high: —

	Admitted.	Admitted "Clear."	Rejected.
June	331	183	31
September	92	17	39
Total	423	200	70
Total rejected	70	..	..
	493	..	..

The four hundred and ninety-three candidates chose their plans of examination as follows: —

Plan (*a*): All the Elementary Studies and at least two Advanced Studies; fifteen hours of examination	207
Plan (*b*): All the Elementary Studies except either German or French, and at least three Advanced Studies; sixteen hours of examination	250
Plan (*c*): All the Elementary Studies except either Greek or Latin, and at least four Advanced Studies, including Advanced Mathematics; seventeen hours of examination	35
Plan (*d*): All the Elementary Studies except either German or French and either Greek or Latin, and at least five Advanced Studies, including Advanced Mathematics; eighteen hours of examination	1
	493

Since 1892 Plan (*a*) has lost slightly; Plan (*b*) has made a scarcely perceptible gain; Plan (*c*), though still unattractive, has gained materially; and Plan (*d*), with one candidate, has fully established its insignificance.

The next table shows the comparative success of the four plans : —

	Admitted.	Rejected.	Percentage of Failure.
Plan (*a*)	176	31	15
" (*b*)	218	32	12.8
" (*c*)	28	7	20
" (*d*)	1	0	0

Of the four hundred and ninety-three candidates, four hundred and three offered Ancient History rather than Modern; and three hundred and fifty-eight offered Experimental Physics rather than Descriptive. The relative attractiveness of the Advanced Studies is almost exactly what it has been for several years : —

	1889.	1890 and 1891.	1892.	1893.
1.	Latin.	Latin.	Latin.	Latin.
2.	Greek.	Greek.	Greek.	Greek.
3.	Latin Comp.	Latin Comp.	Latin Comp.	Latin Comp.
4.	Greek Comp.	Greek Comp.	Greek Comp.	Greek Comp.
5.	French.	Solid Geom.	French.	French.
6.	Solid Geom.	French.	Solid Geom.	Solid Geom.
7.	Log. & Trig.	Log. & Trig.	Log. & Trig.	Log. & Trig.
8.	German.	German.	German.	German.
9.	Chemistry.	Chemistry.	Chemistry.	Chemistry.
10.	Anal. Geom.	Mech. or Adv. Alg.	Adv. Alg.	Adv. Alg.
11.	Mech. or Adv. Alg.	Anal. Geom.	{ Anal. Geom.	Anal. Geom.
12.	Physics.	Physics.	{ Physics.	Physics.

The next table treats the same subject in detail, for the last four years :

Number of Candidates offering	1890.		1891.		1892.		1893.	
	374		403		452		493	
		Per cent.		Per cent.		Per cent.		Per cent.
Greek	262	70	277	68	311	69	364	74
Latin	334	89	362	89	378	84	449	91
Greek Comp. .	190	51	214	53	233	52	261	53
Latin " .	217	58	268	66	267	59	337	68
German . . .	49	13	77	19	61	13	84	17
French	88	24	92	22	124	27	160	32
Logarithms and Trigonometry	75	20	86	21	93	21	105	21
Solid Geometry	91	24	100	25	111	25	110	22
Anal. Geometry	16	4	18	4	7	2	10	2
Mechanics or Advanced Algebra *	22	6	27	6	21	5	18	4
Physics . . .	9	2	5	1	7	2	2	0.4
Chemistry . .	41	11	41	10	58	13	81	16

* After 1890, Advanced Algebra only.

Since 1892 each of the four classical subjects has gained.

The next two tables show, for each study, the percentage of failure, (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only. In Chemistry the percentage of failure, in either table, is conspicuously small; in English, which is never offered as a Preliminary subject, the percentage in both tables is the same; the most striking differences between (*A*) and (*B*) are in the favorite Preliminary subjects, Elementary Greek and Elementary Latin.

(*A*)	1889.	1890.	1891.	1892.	1893.
ELEMENTARY STUDIES.					
English	17	12	14	17	13
Greek	6	9	6	6	7
Latin	5	3	2	4	7½
German	11	12	13	35	25
French	12	11	11	10	8
History (Ancient)	7	6	11	24	10½
" (Modern)	13	18	10	19	12
Algebra	28	11½	10	12	10
Plane Geometry	13	17	17	22	20
Physics (Descriptive)	15	28	25	44	30
" (Experimental)	14	14	9	12	17
ADVANCED STUDIES.					
Greek	20	10	8	8	13
Latin	17	27	24	16	19
Greek Composition	12	17	23	24	27
Latin "	17	23	23	9	9
German	17	18	31	25	21
French	23	24	20½	14	21
Logarithms and Trigonometry	32	40	33½	34	40
Solid Geometry	23	31	16	23	32½
Analytic Geometry	33	37½	22	29	33½
Mechanics or Adv. Algebra*	64	45½	37	43	11
Physics	100	11	80	14	50
Chemistry	0	0	7	3	3½

Now and then a sudden increase in the percentage of failure is explained, if not justified, by the exceptional severity of a single examination-paper or by a too hasty effort to raise the standard in a single subject; now and then, as in the case of Advanced Physics this year, by the untrustworthiness of percentages in subjects offered by only two or three candidates.

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* After 1890, Advanced Algebra only.

(*B*) ELEMENTARY STUDIES.	1892.	1893.	ADVANCED STUDIES.	1892.	1893.
English	17	13	Greek	8	13½
Greek	15	19	Latin	17	22
Latin	11	21½	Greek Composition	29	34
German	56	33½	Latin "	13	12½
French	19	16	German	28	27
History (Ancient)	29	21	French	17	26½
" (Modern)	32	20	Log. and Trig.	35	47
Algebra	23	21	Solid Geometry	25	40
Plane Geometry	30	27	Analytic Geometry	29	33½
Physics (Descriptive)	53	38	Advanced Algebra	43	12½
" (Experimental)	18	20	Physics	14	50
			Chemistry	4	5

Ordinary failure in any subject is marked by *E*; total failure, by *F*. I print the number of *E*'s and the number of *F*'s received at the Final Examinations: —

	E.	*F.*
ELEMENTARY.		
English	59	5
Greek	19	13
Latin	25	9
German	53	19
French	21	11
History (Ancient)	36	9
" (Modern)	6	4
Algebra	41	6
Plane Geometry	79	21
Physics (Descriptive)	14	39
" (Experimental)	25	26
ADVANCED.		
Greek	35	14
Latin	70	13
Greek Composition	60	9
Latin "	17	15
German	12	5
French	25	10
Logarithms and Trigonometry	29	14
Solid Geometry	21	15
Analytic "	1	2
Algebra	2	..
Physics	1	..
Chemistry	3	..

For the first time, I give a table showing the number of "credits" won in each subject at the Final Examinations: —

	June.	Sept.
ELEMENTARY.		
English	11	3
Greek	14	17
Latin	9	26
German	12	7
French	4	8
History (Ancient)	10	4
" (Modern)	. .	2
Algebra	10	4
Plane Geometry	16	3
Physics (Descriptive)	4	. .
" (Experimental)	19	2
	109	76
ADVANCED.		
Greek	51	4
Latin	39	8
Greek Composition	3	1
Latin "	8	2
German	7	2
French	8	4
Logarithms and Trigonometry	1	. .
Solid Geometry	1	1
Analytic "	. .	1
Algebra	2	1
Physics	. .	1
Chemistry	8	3
	128	28

In English, though the examination-books were much better than they commonly have been, the number of credits is, as usual, small.

Four hundred and sixty-seven candidates took Preliminary Examinations: —

Number of candidates who received certificates for examinations occupying	1889.	1890.	1891.	1892.	1893.
Less than five hours	4	5	13	4	2
Five hours	49	51	41	53	49
Six "	63	59	55	74	83
Seven "	54	76	80	92	90
Eight "	79	80	67	84	75
Nine "	16	29	46	48	58
Ten "	11	8	13	18	20
Eleven "	5	6	9	6	11
Twelve "	3	..	2	..	6
Thirteen "	1	3	..	3	..
Fourteen "	..	2	..	..	..
Fifteen "	..	1	..	..	..
Sixteen "	..	..	..	..	..
Seventeen "	..	..	1	..	..
Received certificates	285	320	327	382	394
Failed	67	56	101	78	73
Total number of candidates	352	376	428	460	467

The next table, which shows the percentage of failure in each Preliminary subject, is remarkable chiefly for the heavy percentages in Advanced Studies. In some cases, the number of candidates is so small that no legitimate inference from the percentages is possible; but in others it becomes clear that either the candidates are too immature, or the subjects are poorly taught, or the examiners have in mind a higher standard for Preliminary candidates in Advanced subjects than for Final candidates: —

ELEMENTARY.		ADVANCED.	
English	Not offered as a Preliminary subject.	Greek	46
		Latin	50
Greek	10	Greek Composition	30
Latin	18½	Latin "	19
German	36½	German	35
French	18	Logarithms & Trigonometry	61
History (Ancient)	23½	Solid Geomery	50
" (Modern)	35½	Analytic "	Not offered.
Algebra	13½	Algebra	54
Plane Geometry	37	Physics	Not offered.
Physics (Descriptive)	43	Chemistry	20
" (Experimental)	8		

Another table shows the number of "credits" won at these Preliminary Examinations: —

	June.	Sept.
ELEMENTARY.		
English (not offered as a Preliminary subject)	..	..
Greek	128	1
Latin	97	5
German	17	1
French	10	..
History (Ancient)	25	1
" (Modern)	1	..
Algebra	51	2
Plane Geometry	3	..
Physics (Descriptive)	..	1
" (Experimental)	15	..
	347	11
ADVANCED.		
Greek	..	1
Latin	2	..
Greek Composition	3	..
Latin "	5	1
German	4	..
French	8	..
Logarithms & Trigonometry	..	..
Solid Geometry	2	..
Analytic "	..	..
Algebra	..	..
Physics	..	..
Chemistry	5	..
	29	2

From this and a preceding table (p. 93) it appears that seven hundred and thirty "credits" were won in the examinations of 1893; that more than half of them were won in Preliminary Examinations; and that more than two fifths of them were won in Elementary Greek and Elementary Latin.

In former reports I have touched on the unsatisfactoriness of the certificates of preparation for the Preliminary Examinations. A certificate given because the boy or his father or an under-teacher has pleaded for it, or because everybody in the boy's class ought to be prepared, or because — with good luck — the boy may seem better prepared than he is, or (as in a case I know) because the boy is *not* prepared and needs the lesson of failure, is not an honest certificate.

In view of such considerations and of the many ambiguous certificates received, the Faculty has voted that every certificate shall follow a prescribed form.

The substitution of testimonials of honorable dismissal from schools, in place of the nugatory certificates of moral character so long accepted, will give our Final Examinations more dignity. In my last report I overlooked the fact that Adams Academy has had, for some years, permission to send, instead of the customary certificates, testimonials of honorable dismissal. The practice of this one school will hereafter be the practice of all.

Through the efficient ingenuity of Professors Hart and Morgan, the method of recording the results of the examinations for admission has been much improved; and through the intrusting of the record to special clerks who give it, under Professor Morgan, their undivided attention, the clerical work has gained in promptness and accuracy. Further gains will come next year with more examiners: all the examination books, Preliminary as well as Final, will be expeditiously marked; every doubtful book will be read by two competent persons; and there will be no such thing as re-reading particular books at the request of particular teachers.

Another improvement will be effected next year. By the exercise of a censorship over all the examination-papers, the committee on admission examinations will dispel the notion that our questions are enigmas for specialists, and will establish the examinations in the confidence of the public.

In 1891–92 the Faculty voted to admit students from Japan on special terms, including a knowledge of Japanese and Chinese classics; and to demand as evidence of this knowledge a certificate showing that it would meet the requirements for admission to the Imperial University of Japan at Tokio. With the discovery that this demand was not practical, the Faculty voted, in November, 1892, —

> "To accept as evidence of satisfactory scholarship in Chinese and Japanese a certificate showing that the candidate has reached the standard usual at graduation from the Meiji Gaku-in; or a certificate showing that the candidate has reached the standard required for admission to the University department of the Keiogijuku.

The members of the Administrative Board of Harvard College for 1892–93 were: the Dean of the College; Professors Norton, C. J. White, Bartlett, Davis, Lanman, de Sumichrast, Gross, Morgan, and Marsh; and Messrs. Snow, Marcou, Huntington, Howard, Cummings, and Osgood.

Though the records of the Board show an active disciplinary policy, its treatment of negligent students was less effective than in the preceding year. An overburdened College Office was less prompt in furnishing the Board with information; and, though one Freshman was privately dismissed in about nine weeks, though another was put on probation early in November, and eight more were put on probation before Christmas, yet earlier and more comprehensive action might have forestalled the severity of later votes. In the course of the year, the Board and the Faculty suspended seven students, — one Junior for a second offence in prolonging the Christmas recess; one Senior and two Juniors for abuse of Library privileges; two Juniors for ungentlemanly conduct in a street-car; and two Sophomores for disorder in their room and discourtesy to a College officer. The Board closed the probation of one Junior, one Sophomore, and eight Freshmen. The Faculty dismissed one Junior, one Sophomore, and one Freshman for dishonesty at examinations, and one Special Student for misbehavior on Class Day. Two Seniors, two Juniors, five Sophomores, six Freshmen, and one Special Student withdrew at the request of the Board or the Dean, or by order of the Faculty. A record of thirty involuntary departures shows that the governing powers dealt strictly with offenders; but so few of the offences were discovered early that the amount of discipline was disproportionate to the moral effect.

Severe penalties for the violation of privileges in the Library are necessary, if our system of reserved books is to be maintained. Considering the size of the College, however, and the almost universal use of the Library, betrayals of trust are rare.

Most of our students, indeed, are trustworthy. In spite of disappointing exceptions, my experience in the Dean's Office has increased my respect for College honor. Especially in cases of discipline, I have noticed how squarely the student meets a searching question. Resolutely silent, as he ought to be, in regard to other men's misdeeds, he courageously admits his own.

After some discussion, the Faculty voted, in June, that the right to readmit students whose probation has been closed or who have withdrawn from College belongs to the Administrative Board.

No student loves Harvard College more adhesively than the man who has been turned out of it. After a reasonable period of exile, he organizes his relatives, his friends, and his recently accumulated good purposes, and encamps before the College gates, there to abide until his case is settled. From him and his, meantime, a patient officer of the College may learn much, — the youth's ethical status (and incidentally the potent working of heredity within him), the peculiar dangers that beset him, the right thing to do with him; but, if the College is to be first of all a seat of learning, it cannot sacrifice to a person hitherto so unprofitable the time of the whole Faculty. Even when information is scantier and less importunate, a Board of sixteen persons decides a question of readmission with less debate and more accuracy than a Faculty of eighty. It acts more consistently too; for its attendance is more constant and its patience more enduring.

With the reorganization of the Faculty, the College Regulations were outgrown; and accordingly, in February, 1892, a committee was appointed to revise them. When, at the end of the academic year, this committee had failed to act, it became necessary for the Dean of the College under the guidance of the President, to draw up Regulations for immediate use. These Regulations were designed to include such of the old Regulations for students as were still binding and could not be found in the pamphlet of "Rules for College Studies"; they were designed to exclude the rules of that pamphlet, together with such of the old Regulations as were not Regulations for students but statements of office methods and directions for instructors. Seventy-one Regulations were reduced to nineteen, and eleven pages to three. The Faculty, at its first meeting after the summer vacation, adopted these rules for the time being; and the College has lived under them ever since: —

Petitions.

1. Every request from a College student to the Faculty or to the Administrative Board should be made in writing, and should be addressed to the Dean of Harvard College, 5 University Hall. A petition may be formal or informal, but must be clear. It must contain the writer's name, the name of the class in which he is registered, and his address.

Registration and Residence.

2. Every student is required to present himself for registration on Thursday, the first day of the academic year, between 9 A.M. and 1 P.M., at a place announced on the bulletin boards. He is further required to register not later than 12 M. on the first week-day after the Christmas recess and the first week-day after the April recess.

3. Continuous residence at the University is required during term-time. No interruption of residence is permissible, except for satisfactory reasons stated to the Recorder (orally, if possible) before the student leaves Cambridge. The student who has been absent must also report in person to the Recorder immediately on his return.

College Exercises.

4. A student prevented by sickness or other cause from attending College exercises for a day or more must send notice to the Recorder without delay. Immediately on his return to duty, he must make, at the Recorder's office (5 University Hall), a specific statement of the cause of his absence; and, if his explanation is satisfactory, his absence will be excused.

5. A student who fails to give an instructor a theme, forensic, or other written composition at the appointed time will get no credit for it, unless he satisfies the Recorder that the delay was caused by serious illness or other unavoidable hindrance.

6. A student who has neglected the work of any College course may be excluded from the course by the instructor, with the approval of the Dean.

7. A student who has failed in any course of prescribed study must pass the mid-year and final examinations of that course in some subsequent year. A student who has failed in an elective study may make up the deficiency by taking in some subsequent year the same or any equivalent elective study in addition to those regularly required.

8. To obtain credit in a course of study, or to count the course towards fulfilment of the requirements for the degree, the student must have attended both the mid-year and the final examination. This rule applies to all students, including suspended students and students on leave of absence.

9. A student who has been absent from a mid-year examination, and has satisfied the Recorder that his absence was caused by serious illness or other unavoidable hindrance, is entitled to a second and last opportunity of passing the examination at some time during the period of the final examinations, provided he make written request for such examination before May 1.

10. A student who, having passed the mid-year examination in any course of study, has been absent from the final examination, and has satisfied the Recorder that his absence was caused by serious illness or other unavoidable hindrance, is entitled to a second and last opportunity of passing the examination at some time during the first fortnight of the ensuing academic year, provided he make written request for such examination before September 10.

11. No student is permitted to take any books or papers into an examination room except by express direction of the instructor. No communication is permitted between students in an examination room on any subject whatever.

*12. If a student is tardy at an examination, he may not be admitted to it, and may be reported as absent.

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* This Regulation has been superseded by a special vote of the Faculty:

"A student who is not in the examination room within five minutes of the hour appointed for the examination shall not be admitted without permission of the instructor or of the officer in general charge of the examinations."

PROMOTION.

13. In order to be promoted to a higher class at the end of a College year, a student must not, in that year, have stood below Grade *C* in more than three full courses or the equivalent of three; and must not, in his College work up to that time, have a deficiency of two and a half courses.

A student who has failed of promotion regains his former standing as soon as, at the end of a College year, the average number of courses in which he has stood below Grade *C* from the beginning of the year in which he failed of promotion is not more than three a year, and the deficiency in his College work is less than two and a half courses.

14. A student who has failed of promotion, and who wishes to regain his former standing by additional work, must receive for his choice of studies the written approval of the Dean.

15. A student who has failed of promotion under the operation of § 13 is thereby placed on probation (§ 19) unless he satisfies the Administrative Board that his failure was not due to neglect.

GOOD ORDER.

16. No student shall lodge or board in any house disapproved by the Regent, or change his lodging without giving immediate notice to the Recorder.

17. No student shall refuse to give his name to an officer of the University. Every society of students shall give the Regent, at his request, a complete list of its officers and members.

18. No dramatic or musical society shall take part in an entertainment for money or out of the limits of Old Cambridge without permission of the Faculty Committee on Dramatic and Musical Entertainments.

DISCIPLINE.

19. Neglect of College work and offences against law and order will be dealt with as the Faculty or the Administrative Board shall determine. Discipline may be enforced by Admonition, Probation, Suspension, Dismissal, or Expulsion.

Admonition is warning notice to parent or guardian.

Probation means serious danger of separation from College. A student on probation is not allowed to compete for scholarships, prizes, or honors, or to take part — whether with students or with other persons — in any public theatrical or musical performance or in any public athletic contest; he cannot be restored to full standing without a special vote of the Administrative Board, and he cannot be recommended for a degree; he may be required to put himself under the direction of a private tutor approved by the Dean, or to report daily to an officer of the University, or to do both; and at any time, by vote of the Administrative Board, his probation may be closed and his connection with the College ended.

Suspension is temporary separation from the University, and may involve residence in a specified place and performance of specified tasks. A suspended student is not allowed to take part in the public performances or games of any College association. A suspended student must return to Cambridge for mid-year and final examinations.

Dismissal closes a student's connection with the University, without necessarily precluding his return.

Expulsion is final separation from the University.

Our rules for good order look meagre; but experience shows that the particular mention of some offences is often interpreted as indifference to others. Under the old Regulations, for example, I knew a clergyman to urge in defence of a gambler that there was no rule

ERRATUM.

Page 101, line 15: for "three fourths (instead of one half)" read *one half (instead of one fourth)*.

proposed it to consider the expediency of requiring more high marks as well as fewer low ones, and to report early in the ensuing year.

The increase in our numbers, the complications of the elective system, and the growing effort to keep students at work and to test their progress have added enormously to the demands on the clerical force in the College Office. Indeed the business of the Office has so far outgrown its equipment, and even its accommodations, that thorough reorganization on business principles will soon be a necessity. The Office rooms — each attractive in itself — are inconveniently situated in relation to each other; and the clerical force, though intelligent and faithful, is at busy times hopelessly inadequate. The half-dozen long jobs that should be done in the first three days of the College year employ one clerk for six weeks, while the other clerks have more than they can do to keep even with the demands of the Office from day to day. As a result, our records are not brought up to date until just before Christmas. We need rooms well arranged and well appointed, including a few places inaccessible to the College public (neither ciphering nor confidential talking should be done in thoroughfares); we need a somewhat larger clerical force, responsible to the Recorder; and we need good temporary clerks in emergencies. For all this we need money.

At best, it is hard for the College Office to be accurate, since it depends for its material on inaccurate men. Professors are not always bound by its laws: they come to it as superiors (kindly but often inadvertent) who give the Recorder facts to classify and to combine. Sometimes they expect perfect results from imperfect data. They mislay notices, forget or misstate rules, and innocently produce confusion which they as innocently attribute to the Office clerks. All this, though natural and pardonable in men addicted to higher things, is none the less menacing to our records.

Prompt action in the Office is especially stimulating to Freshmen and, among Freshmen, to athletes. Freshman football, beginning with the College year, makes alarming draughts on the student's time and strength. A youth of eighteen, just entering the College world and the world of society, with a comfortable consciousness of manhood and a perilous physical and mental elation, is still further elated and imperilled by finding himself a member of a "team." His classmates pay to make him so skilful that by and by they may pay to see him; and, like an Olympic victor, he is fed, in part, at the public expense. His coach, whom he artlessly supposes to be a person of great weight with the Faculty, commands him to be on the field at a certain hour; and, regardless of studies, he obeys. Moreover, if he does not surrender himself to football body and soul, he is abused for treating so serious a pursuit as if it were play. The autumn of 1892 showed plainly the dangers to which athletic Freshmen are exposed. Older men who sympathize with a young man's rejoicing in his strength and in matching his strength against a worthy rival, cannot but lament the short-sightedness of those athletic leaders by whom a Freshman's whole career is hazarded for a single game with Yale.

The proper relation of College study to Freshman football is clear; but the relation of College study to University football involves problems so serious and as yet so imperfectly mastered that I am unwilling to discuss it here and now.

Although the Faculty gave much attention to the question of academic rewards for good scholars in no need of money, the year brought no important change in the administration of scholarships. Our numbers grow; and with them grows the difficulty of awarding scholarships. No committee can have exact personal knowledge of two hundred and fifty applicants; and scarcely any two rivals take the same studies, meet the same teachers, or are measured by the same standards. In view of all this, it would be well for the applicant to answer, on a blank form, minutely specific questions, and for parent or guardian to certify the statement.

Another change in the administration of scholarships I regard as imperative — the withdrawal of aid from men who undermine our teaching. In a few of our larger lecture courses, the work of individual students is not closely followed by the instructor; and grades are assigned chiefly, if not wholly, on the strength of two or three examinations. Lazy students are thus tempted to do no work until just before an examination. If they were then left to themselves, they might learn the consequence of idleness and teach it to their successors; but, unhappily, their demands have created a supply of wage-earners who sell notes, make a careful study of the questions likely to occur and recur in large elementary courses, hold, on the night before an examination, "seminars" in which they review, at one, two, or three dollars a ticket, the work of a half-year, — and in general abet idle students in shirking their daily duty. Though private tutors are sometimes useful in bringing up to the mark men of imperfect early training and men who repent their wasted opportunities, yet the difficulty of drawing the line between coaching honestly and coaching dishonestly might well deter a man of anxious conscience from coaching at all. Perhaps it is this difficulty, and the further difficulty of knowing what tutors draw the line and what tutors do not, that has prevented the Faculty from expressing itself on this important subject; yet even the note-selling that instructors approve and the "seminars" of legitimate instruction (if there are such things) may well be dispensed with, if illegitimate coaching can be stopped. One thing, at least, is certain: students engaged in illegitimate coaching should receive no scholarship or other pecuniary aid; for, however studious they may be, however resolute in educating themselves, however temperate in their private life, they are, — directly or indirectly, consciously or unconsciously — enemies to College learning, College morality, and College honor.

L. B. R. BRIGGS, *Dean*.

DECEMBER, 1893.

THE LAWRENCE SCIENTIFIC SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR: — The prosperous condition of the School, which has been noted in the reports of previous years, has continued. The number of students enrolled surpassed that contained in the previous catalogue by more than fifty per cent. Of those registered in 1892–93, one hundred were admitted to regular standing, while eighty-one were classed as special students. In the previous year, forty-eight only were candidates for a degree, while seventy were special students.

From its foundation, it has been the custom of the authorities of the Lawrence Scientific School freely to admit, except to the department of Engineering, persons who appeared to be well qualified to pursue a considerable portion of the work which it offered, without formal preliminary examinations. Such tests indeed, were not applied to any of its students until the year 1853. Since that year, those enrolled in the School have been divided into two groups, the one including those who entered by way of examinations, with the intention of taking the degree; and the other those who resorted to the School for the study of some particular subject, or who intended to remain for a limited time, and therefore had been numberd in the class of specials. Until the beginning of this academic year, 1892–93, an undefined latitude in the choice of studies had been granted to this last named class of students. The Administrative Board then determined, in view of the changed conditions of the University, that it was desirable to hold all Special students to a plan of study which should be substantially equivalent to that prescribed in some one of the departments. Therefore, in the catalogue of this year, such students are grouped according to the courses which they are pursuing, in some one of the seven divisions of the studies which are provided. In thus limiting the opportunities of special students, the Administrative Board has recognized the fact that the School is essentially professional in its aim. It seeks to prepare men for some technical pursuit, or for teaching natural science. Those who do not desire the specialized education which it affords, belong either in the Graduate School, or in the group of College Specials. It is evident that this system will tend somewhat to diminish, though in a wholesome manner, the number of Special students who will enter the School. It now seems indeed necessary to give this branch of the University a definite character, and to maintain the special nature of the work which should be required of its pupils.

The department of Anatomy, Physiology and Physical Training which was established by the votes of 1891–92, successfully began in 1892–93 its work with an entering class of fourteen students. The attendance in 1893–94, and the correspondence with those who propose to enter for the next year, make it clear that this part of the School is to be of considerable value in preparing young men to enter on their medical studies. By the arrangement made with the Medical Faculty of this University, graduates of this department are able to save one year of the time required to obtain the degree in Medicine. The laboratory of this department is already well fitted with apparatus designed for testing the conditions of the body. The greater part of these mechanisms have been devised by the officer in charge of the course, and constructed by the artificer of the laboratory. Some of the more important of these inventions were exhibited at the Chicago Fair, where they were approved by the specialists in this branch of inquiry.

The department of Electrical Engineering is for the present well accommodated, so far as laboratory needs are concerned, by the Rotch work-shop. This is now effectively supplied with instruments for use in constructive work; two large engines, made within it, formed a part of the Harvard exhibit at Chicago.

In addition to his term-time work, Mr. Adams, the officer in charge of this work, conducted a summer course of six weeks duration, the aim being to provide the student with a knowledge of the technical work in electrical engineering, and so much of the science as could fairly be given in that time. This summer work opens in some measure the resources of the School to many students who find it impossible to resort to its classes in term time. In this way the institution makes a contribution to a distinct educational need.

The department of Civil and Topographical Engineering has been strengthened by the labors of Professor Burr, who effected important improvements in the courses. The instruction in Highway Engineering, begun by Mr. McClintock, has proved very successful. It was attended not only by the fourth year students in engineering, but also by a number of students from the College. Mr. McClintock has gathered a considerable amount of material illustrating the different processes of road-making and the results of the different methods pursued. This collection promises to become the nucleus of a valuable museum. As the instructor in this subject is a member of the Massachusetts Highway Commission, — in fact its road engineer, — he is in a position favorable to the development of a course of instruction which shall be well founded in practical experience.

Under a recent vote of the Faculty provision has been made for instituting a course in Architecture, and Mr. H. Langford Warren has been appointed by the Governing Boards to begin the work at the outset of the year 1893–94. Although at present provision has been made for no more than the first year of instruction in this subject, it is the intention of the Administrative Board and Faculty, as expressed in their votes, to push forward the development of this department so that it shall afford a four years' course for students who intend to become architects.

The departments of Geology, Biology, Chemistry, and General Science remain substantially unchanged. In the first named, arrangements have been made to employ an additional instructor, Mr. H. L. Smyth, who is to give courses in Geological Surveying and Mining Geology. He is also to assist the other instructors of the department in the care of students who intend to devote themselves to the more practical studies in geology, in both term time and vacation. For several years students in this department of the School have sought a preparation which might make them ready for work in mining and other applied branches of the science. It now seems well to extend the training of such persons.

During the year 1892–93, a diligent effort has been made to improve the supervision of the students by a systematic visitation of their rooms. The aim of this work has been to make sure that the men were properly lodged, and that their surrounding were hygienic. An effort, attended with some success, has also been made, with the assistance of Dr. Fitz, the head of the department of Anatomy, Physiology and Physical Training, to care systematically for the health of those students in the School who evidently needed peculiar attention. He has visited such persons, and has determined the measure of medical aid which they required. It is the intention of the authorities of the School to extend this system during the year 1893–94.

For several years the growth of the Lawrence Scientific School has been at an increasing rate. The correspondence of 1892–93 clearly indicated that in 1893–94 the increment would be even greater than before. This anticipation, based upon the letters received, has been made good by the results of the registration at the beginning of the present year, two hundred and eighty students having been enrolled, an increase in the total number of ninety-nine, or about fifty-five per cent more than the total of the preceding year. The larger part of the gain has been in the department of Engineering. This year the total number of students in those branches is one hundred and twenty-one as against seventy-one last year. This augmentation, though very satisfactory for the reason that it manifests a growing interest in a portion of the School which has hitherto languished, and which moreover should be the core of such an institution, is a cause for some anxiety in that our resources in the way of room for lectures, laboratories, and drawing work are already insufficient. It is therefore necessary at once to look forward to a provision for these needs in an additional building which should be altogether devoted to this part of the work of the School. The other departments, particularly those in Natural History and Chemistry, are in general well provided with quarters for their work.

The needs of the Engineering courses will be the more serious as the department undertakes to provide in a fit manner for work in Hydraulic, Mechanical, Marine, and Mine Engineering. There is now an evident demand for a large provision looking towards such instruction. All necessary extensions in the number of teachers and in the way of laboratory appliances can readily be provided for from the increase in the revenue of the department, but it is not possible from this source to afford house room for the work. It seems not unreasonable to hope that the School, which has now given proof of vigorous life, may successfully plead with some of its well-wishers for the means required for a new building.

It is interesting to note that the students of the School are, to the number of just one half, drawn from beyond the Commonwealth of Massachusetts. In the list, twenty-six states of the Union are represented; it includes, moreover, men from Canada, Cuba, Porto Rico, Sweden, Syria, and China. There are five students also from the Territory of Utah. A comparison with the geographical distribution of the students in the College shows that the Lawrence Scientific School draws its students from a relatively larger territory.

It should perhaps be noted that the business difficulties of the country clearly diminished the growth of the School in the present academic year. It is estimated that the enrollment would have been about one fourth larger, save for this hindrance.

During the academic year 1892–93 the general conduct of the students in the School has been satisfactory. In only one case was it found necessary to inflict any of the severer penalties used in our discipline, though it should be observed that twelve students were sent away for inadequate performance of duty.

N. S. SHALER, *Dean*.

December, 1893.

THE GRADUATE SCHOOL.

To the President of the University:

Sir, — I have the honor of presenting my report on the state of the Graduate School for the academic year 1892–93.

The number of students registered and carrying on studies in the School, was two hundred and sixteen; of whom two hundred were classed as Resident Students, and sixteen as Non-Resident Students.

The subjoined table exhibits the usual classification of these students, according to various lines of division; the figures being given, for convenience of comparison, for the two academic years, 1891–92 and 1892–93: —

	1891–92.		1892–93.	
Resident Students doing full work in the School for the whole academic year	108		127	
Resident Students not doing full work, or not working for the whole year as resident students	79	187	73	200
Non-Resident Students holding fellowships	9		9	
Non-Resident Students not holding fellowships	4	13	7	16
Students principally engaged				
In Semitic Studies	7		3	
In Classical Philology and Indo-Iranian Languages	20		25	
In English and Modern Languages	29		34	
In Philosophy (including Teaching)	22		20	
In History and Political Science	29		40	
In the Fine Arts	3		2	
In Music	1		1	
In Pure and Applied Mathematics	20		24	
In Physics	9		8	
In Chemistry	14		14	
In Natural History	35		37	
In American Archaeology and Ethnology	3		2	
Unclassed students	8	200	6	216
First-year students	131		125	
Second-year students	44		59	
Third-year students	13		24	
Fourth-year students	8		4	
Students in a fifth or later year	4	200	4	216
A.B.'s and S.B.'s of Harvard University, and of no other institution	78		84	
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University	24		26	
Students not holding the Harvard degree of A.B. or S.B.	98	200	106	216
Students holding the Harvard degree of A.M., Ph.D., or S.D.	43		62	
Students holding the Harvard degree of A.B. or S.B., but not of A.M., Ph.D., or S.D.	73		69	
Students holding no Harvard degree in Arts, Philosophy, or Science	84	200	85	216

It is proper to state that a certain element of judgment necessarily enters into some of the figures of the above table. In a few cases, a deficiency of formal returns from instructors makes it difficult to determine whether a student engaged in special research was or was not doing full work for the whole academic year. Where such a student appears to have had no other occupation, and is known to have enjoyed the confidence of the teachers in his department, the question has been decided in the affirmative; but in the negative, if he was an assistant or instructor, unless his record of work as a student is complete, or the year has been counted by vote of the Administrative Board of the School as a full year of study for a degree. Students not doing full work for the whole academic year are those who joined the School, or withdrew from it, in the course of the year, or who were taking less than a complete year's studies. But several students who, for various reasons, withdrew from the School within a few weeks after their registration are not enumerated at all.

The assignment of students to the several Divisions of the Faculty of Arts and Sciences likewise presents some difficulties. It often happens that a student is occupied in studies which belong to different Divisions, but which nevertheless form a connected field of work; or is mainly occupied with one branch of study, but for some good reason takes a part of his work outside of that branch. In such cases, the student is referred to the Division of the Faculty in which his central point of interest seems to lie; but it is not always easy to do this with certainty, and some errors of judgment may have been made in the decision. The unclassed students are those whom I have found myself unable to refer with propriety to any one Division of the Faculty; but this should not be understood as necessarily meaning that the choice of studies in such cases is bound together by no principle of unity, or fails to exhibit a distinct and intelligible purpose.

In my annual report for 1886–87, I presented a table showing the number of students registered in the Graduate Department, and the number of degrees conferred in the Deparment, for each year, from the time of its foundation in 1872 to the date of that report. The table showed that the number of students in the Department was nearly stationary during the first ten years of its existence. In its second year, 1873–74, the total was thirty-eight; in 1882–83, it was fifty-four. Some tendency to increase then began to appear; and, in 1885–86, the number of resident students was fifty, and the total number of students was sixty-six. These figures include only persons who would now be registered as regular students in the Graduate School.

I now present a continuation of this table, beginning with the year 1886–87, the first in which students were admitted to regular standing in the School without reference to their possible subsequent candidacy for a degree. The accumulated influence of three improvements in the constitution of the School may, I think, be distinctly traced, though they can hardly be separated from each other. These are:

(1) the institution of Morgan Fellowships in 1884, and the subsequent increase, from time to time, in the number of fellowships and scholarships; (2) the separation of the question of admission from that of candidacy for a degree, effected in 1886; and (3) the constitution of the Faculty of Arts and Sciences in 1890, and the transference of the School to the charge of that Faculty.

In this table, I include under the heading "Harvard" those students who had previously taken the Harvard degree of A.B. or S.B. All others, though they may have taken some other Harvard degree, are included under the heading "Non-Harvard." The numbers for the current academic year, 1893–94, are, of course, incomplete. Additional students are likely to register in the course of the year.

	Students.					Degrees.				
	Resident.	Non-Resident.	Total.	Harvard.	Non-Harvard.	Grad. Students.	Professional St. on special courses.	Professional St. with prof. degree.	Harvard.	Non-Harvard.
1886–87	64	14	78	54	24	17	3	16	25	11
1887–88	84	13	97	67	30	35	6	16	42	15
1888–89	89	10	99	63	36	30	5	11	17	29
1889–90	96	15	111	73	38	38	3	24	41	24
1890–91	117	15	132	81	51	51	5	31	62	25
1891–92	187	13	200	102	98	76	13	21	66	44
1892–93	200	16	216	110	106	88	8	23	63	56
1893–94	245	11	256	131	125					

It will be seen that a decided increase in the membership of the School has been in progress during the period covered by this table, and is still continuing at a steady and satisfactory rate. The increase in the current year is, indeed, greater than in any preceding year, except 1891–92. It is to be added that no deterioration of quality accompanies the gain of numbers. On the contrary, the School has never contained so large a proportion of able and ambitious students as at the present time, or been so generally distinguished by ability, high character, the spirit of devotion to learning, and an intelligent and active interest in the honor and well-being of the University. We may, I believe, feel assured that, whatever causes may operate from time to time in coming years to interrupt our numerical growth, we have acquired a position of real strength which cannot be impaired, so long as we ourselves are careful to maintain the character of the School as a place of learning and research in scholarship and science.

In addition to the students registered in the Graduate School, the Catalogue for 1892–93 contains the names of forty-nine graduates of colleges, scientific schools, or professional schools registered as undergraduates of Harvard College, and of two registered as students of the Scientific School. The whole number of graduate students under the charge of the Faculty of Arts and Sciences was therefore two hundred and sixty-seven. Thirty-eight students of the different professional schools presented themselves before the Faculty of Arts and Sciences at the close of the year 1892–93 as candidates for the degree of Master of Arts; of whom twenty-five were also candidates for a professional degree, and thirteen were candidates for the degree of A.M. alone.

I regret to have to report the death of three students in the Graduate School in the year 1892–93.

John Gundy Owens was born at Lewisburg, Pa., 27 September 1865. He took the degree of A.B. at Bucknell University, Pa., in 1887, and that of A.M. at the same institution in 1890. He entered the Graduate School at the beginning of the academic year 1890–91, as a student in the department of American Archaeology and Ethnology. After pursuing his studies for one year as a Resident Student he received from the Trustees of the Peabody Museum an appointment to the Hemenway Fellowship, and was also appointed upon the Peabody Museum Honduras Expedition. He received leave of absence from the Administrative Board of the Graduate School for the purpose of joining this expedition, and was registered as a Non-Resident Student during the two years 1891–93. In the summer of 1892, in the months in which work was impossible at Honduras, he was sent to Madrid in charge of the exhibit made by the Peabody Museum at the Columbian Historical Exposition held in that city; but he returned in September to Cambridge, and went soon after again to Honduras. He died at Honduras, 18 February 1893, after a short illness, of a fever of the country taken in the prosecution of his researches there. His death was a deeply lamented loss to the School and to the department of study which he had chosen as his field of work through life, and to which he had devoted himself with unusual ability and zeal. He was a student of the highest promise, and had already distinguished himself by important original work; and he was a man of attractive and forcible character.

Ambrose Watts MacLeod was born at Dunstaffnage, P. E. I., 4 January 1865. He took the degree of A.B. at Dalhousie University, N. S., in 1888, and was graduated at the Halifax Theological College in 1890. He entered the Senior Class of this University at the beginning of the academic year 1890–91, and took the degree of A.B. with that Class. In 1891–92, he was a graduate student of the Divinity School, and received the degree of A.M. for studies in Divinity at the close of the year. During the year 1892–93, he was registered in the Graduate School as a Resident Student of Philosophy; and showed himself an able and faithful student. He died at Cambridge, 17 June 1893, of a rapid consumption, after an illness of only a few weeks.

Hunter Lee Harris was born at Stovall, Granville Co., N. C., 16 December 1866. He took the degree of S.B. at the University of North Carolina in 1889. He was an Instructor in Geology and Mineralogy at the same university in 1891–92, and was an assistant geologist on the North Carolina Geological Survey during the summers of 1891 and 1892. He joined our Graduate School at the beginning of the academic year 1892–93. Throughout that year, he was a Resident Student of Geology, and held a University Scholarship. He made a good record as a student, and was promoted to a Townsend Scholarship for the year 1893–94. He left Cambridge to resume his work during the vacation on the North Carolina Geological Survey; and was drowned, while bathing in the Lower Little River, N. C., 13 July 1893.

The number of students in the Graduate School admitted to any degree, and the number of students in other departments of the University admitted to the degree of A.M., in the two years, 1892 and 1893, have been already stated in the general table, showing the progress of the School since 1886, given on a preceding page, and are exhibited in detail in the following table: —

	1892.		1893.	
Graduate students admitted to A.B.	14		17	
Graduate students admitted to A.M.	55		58	
Graduate students admitted to Ph.D	5		12	
Graduate students admitted to S.B.	1		0	
Graduate students admitted to S.D.	1	76	1	88
Seniors admitted to A.M., with A.B.	8		1	
Professional students admitted to A.M. on special courses of study	13		8	
Professional students admitted to A.M. with a professional degree	21	42	23	32
Total of the above list		118		120
Deduct Graduate students admitted to A.B. or S.B.		15		17
Total number admitted to A.M., Ph.D., or S.D.		103		103

The total number admitted to the degrees of A.M., Ph.D., and S.D. may also be classified as follows: —

	1892.		1893.	
Harvard Bachelors of Arts or Science, or persons receiving A.B. at the same time, not also graduated elsewhere	58		47	
Harvard Bachelors of Arts or Science, also graduated elsewhere	16		17	
Students not Harvard Bachelors of Arts or Science	29	103	39	103

The following are the names of the students admitted to the degree of *Doctor of Philosophy* or *Doctor of Science*, at Commencement 1893: —

To Ph.D.

William Nickerson Bates, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–93.
Philology (Greek and Latin). *Thesis*, "*Quaestiones Lycophroneae.*"
Now Instructor in Greek at this University.

William James Battle, A.B. (*Univ. of North Carolina*) 1888, A.M. (*Ibid.*) 1889, PH.D. (*Ibid.*) 1890, A.M. (*Harvard Univ.*) 1891. Res. Gr. Stud., 1890–93. Morgan Fellow, 1891–93.
Philology (Greek and Latin). *Thesis*, "*De exsecrationibus lamminis plumbeis insculptis.*"
Now Professor of Greek at the University of Texas.

William Herbert Carruth, A.B. (*Kansas State Univ.*) 1880, A.M. (*Ibid.*) 1883, A.M. (*Harvard Univ.*) 1889. Res. Gr. Stud. and Morgan Fellow, 1888–89. Non-Res. Gr. Stud., 1892–93. Professor of German, Kansas State University.
Philology (German Literature and Germanic Philology). *Thesis*, "*Expressions of German National Feeling in Historical and Poetical Literature from the middle of the Tenth Century to the time of Walther von der Vogelweide.*"

George Lucius Collie, S.B. (*Beloit Coll., Wis.*) 1881, A.M. (*Harvard Univ.*) 1891. Res. Gr. Stud., 1890–93. Morgan Fellow, 1891–92. Professor of Geology, Beloit College, Wis.
Natural History (Geology). *Thesis*, "*The Igneous and Metamorphic Rocks of Conanicut Island.*"

Evarts Boutell Greene, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–93. Assistant in History, 1892–93.
History (American Constitutional History). *Thesis*, "*The American Provincial Governor.*"
Now holds the Harris Fellowship, and is continuing his studies at the University of Berlin.

Walter Scott Hendrixson, S.B. (*Union Christian College*) 1881, A.M. (*Ibid.*) 1884, A.M. (*Harvard Univ.*) 1889. Res. Gr. Stud., 1888–90. Assistant in Chemistry, 1889–90. Professor of Chemistry, Iowa College, Grinnell, Ia.
Chemistry (Organic Chemistry). *Thesis*, "*Chlor-Sulphopyromucic Acids, with an Historical Sketch of Pyromucic Acid and its Derivatives.*"

Alfred Henry Lloyd, A.B., 1886, A.M. 1888. Res. Gr. Stud., 1887–89. Non-Res. Gr. Stud. and Walker Fellow, 1889–91. Instructor in Philosophy, University of Michigan.
Philosophy (Ethics). *Thesis*, "*Freedom.*"

Sidney Edward Mezes, s.b. (*Univ. of California*) 1884, a.b. (*Harvard Univ.*) 1890, a.m. (*Ibid.*) 1891. Res. Gr. Stud., 1889–92.

Philosophy (Metaphysics). *Thesis*, "*Pleasure and Pain Defined.*"

Now Instructor in Philosophy at the University of Chicago.

Charles Peabody, a.b. (*Univ. of Pennsylvania*) 1889, a.m. (*Harvard Univ.*) 1890. Res. Gr. Stud., 1889–92.

Philology (Greek and Latin). *Thesis*, "*De Saturnio Versu.*"

Now continuing his studies at the American School of Classical Studies at Athens.

George Andrew Reisner, a.b. 1884, a.m. 1891. Res. Gr. Stud., 1890–93. Assistant in Semitic Languages, 1891–93.

Philology (Semitic Languages). *Thesis*, "*A Review of the Grammatical Development of the Noun-endings in Assyro-Babylonian.*"

Now holds the Rogers Fellowship, and is continuing his studies at the University of Berlin.

William Emerson Ritter, s.b. (*Univ. of California*) 1888, a.m. (*Harvard Univ.*) 1891. Res. Gr. Stud., 1889–91. Assistant in Zoölogy, 1890–91.

Natural History (Zoölogy). *Thesis*, "*On the Eyes, the integumentary Sense Papillae and the Integument of the San Diego Blind Fish (Typhlogobius Californiensis Steindachner).*"

Now Assistant Professor of Zoölogy at the University of California.

Charles Luke Wells, a.b. 1879, d.b. (*Episcopal Theol. School*) 1882. Res. Gr. Stud., 1880–83, 92–93. Non-Res. Gr. Stud., 1883–84. Past Professor of Ecclesiastical History, Seabury Divinity School, Fairbault, Minn.

History (English History of the Middle Ages). *Thesis*, "*The Public Local Courts of England, 1066–1307: Their Constitution, Functions, and Attributes.*"

Now continuing his studies at the University of Oxford.

To S.D.

Robert Wilson Cornelison, s.b. (*Univ. of Illinois*) 1890. Gr. Stud. of Univ. Ills., 1890–91. Res. Gr. Stud., 1891–93. Morgan Fellow, 1892–93.

Chemistry (Organic Chemistry). *Thesis*, "*Mucobromic Acid and some of its Derivatives.*"

Now holds a position as a Chemist at Brooklyn, N. Y.

I have next to report on the *Fellowships and Scholarships* belonging to the Graduate School and given to students in that School on nomination by the Faculty of Arts and Sciences. Twenty-one fellowships and forty-seven scholarships were held in the year 1892–93. Appointments were made to nineteen fellowships and forty-six scholarships for 1893–94. In the year 1892–93, nine fellowships were held by Non-Resident Students having permission to pursue their studies abroad; while twelve fellowships and all the scholarships were held by Resident Students. For the year 1893–94, permission was given to ten holders of fellowships to pursue their studies abroad; the remaining nine holders of fellowships and all the holders of scholarships are required to pursue their studies as Resident Students throughout the academic year. Application for appointment to a fellowship or scholarship for any academic year is made in the month of March of the preceding academic year; and the regular assignment takes place as soon thereafter as possible, seldom however till near the close of the year. Additional appointments are made after the close of the year to fill vacancies; and for these appointments later applications are considered, as well as those presented in March. The whole award of fellowships and scholarships for any academic year (whether made in the preceding year or at a later date) constitutes a connected piece of business, properly belonging to the preceding year; and it is therefore my custom to embrace the whole of that award in my report for such preceding year.

The appointments to fellowships and scholarships are made with great care from a large number of applicants, many of them personally unknown to any of the instructors at this University. The selection is made by the Committee on Fellowships and Other Aids to Graduates, which, before acting, distributes the applications and accompanying papers among the committees in the several departments of study, and requests advice from those committees. A printed list of the applicants, with a brief statement of their purposes, qualifications, and academic history, is also sent out to every member of the Faculty of Arts and Sciences. The Committee on Fellowships and Other Aids to Graduates reports its recommendations to the Faculty of Arts and Sciences; which makes nominations, after consideration and discussion, to the President and Fellows.

The appointments are given only to applicants who are believed, on the evidence before the Faculty, to be able, faithful, well advanced in their studies, and in every way deserving. The Fellowships, among which the Tyndall Scholarship is included, are foundations or appropriations of considerable value, expressly established for the promotion of higher learning and the benefit of the Graduate School; and these, in particular, are reserved for persons regarded as having merit of a distinguished order. Most of the appointments are given to applicants who have proved their qualification for such appointments by work done in studies pursued for at least a year at this University; but a few are awarded to persons never previously connected with the University, on the evidence of good work done elsewhere. All the appointments, except fellowships expressly accompanied by permission to study abroad, are given under the requirement of residence and creditable study in the Graduate School throughout the academic year. The non-resident fellowships are restricted to graduates of some Department of the University and students who, if not graduates, have studied here for several years with high credit. The holder of such a fellowship is expected to be in frequent communication with the Dean of the Graduate School and with some professor of the University, and to present a yearly report.

The yearly income of the fellowships varies from four hundred to seven hundred and fifty dollars; that of the scholarships varies from one hundred and fifty to three hundred dollars. Free tuition is not included.

Besides the fellowships and scholarships which are given on nomination by the Faculty of Arts and Sciences, the following foundations, administered outside the anthority of that Faculty, are sometimes or in part available for Graduate Students: —

THE HUMBOLDT FUND; for the study of Zöology; income at the disposal of the Faculty of the Museum of Comparative Zoölogy.

THE HEMENWAY FELLOWSHIP; for the study of American Archaeology and Ethnology; awarded by the Trustees of the Peabody Museum.

THE THAW FELLOWSHIP; for the study of American Archaeology and Ethnology; awarded by the Trustees of the Peabody Museum.

THE SCHOLARSHIP OF THE HARVARD CLUB OF SAN FRANCISCO; awarded by that club to a graduate of the University of California, studying in the Graduate School of this University.

THE SCHOLARSHIP OF THE ROCKY MOUNTAIN HARVARD CLUB; awarded by the club to a graduate of a Colorado college or school, studying at this University; held, in 1892–93, by a student of the Graduate School.

THE VIRGINIA BARRET GIBBS SCHOLARSHIP; for Zoölogy; for one or more graduates or students in some Department of Harvard University, not necessarily candidates for any degree; awarded on nomination made by the Faculty of the Museum of Comparative Zoölogy. This foundation was erroneously enumerated in my last annual report among the regular scholarships of the Graduate School.

In addition to these foundations, a TABLE AT THE NAPLES ZOÖLOGICAL STATION was, in the year 1892–93, placed for three years at the disposal of the Faculty of the Museum of Comparative Zoölogy. An appointment to this table may be made at any time in the year for such period as may seem advisable in each case. It is to be given to one who is, or has recently been, a student or instructor at some American university, preferably a Doctor of Philosophy or Science; and who has published some creditable original investigation, and is recommended as an able investigator by the professor under whom he has studied.

The first of the following tables shows the number of applications made, in the two years 1891–92 and 1892–93, for appointment for the next following years, 1892–93 and 1893–94 respectively, to fellowships and scholarships belonging to the Graduate School and awarded on nomination by the Faculty of Arts and Sciences. It also shows the number of applicants who received appointments to such fellowships or scholarships, or as instructors or assistants in the University; and the number of applicants who entered, or continued in, some department of the University as students, without having received appointments to fellowships or scholarships. The second table gives the classification of applicants and appointees according to their subjects of study; to their previous relation or non-relation to the University; and to their standing as holders of academic degrees; — only those persons being counted in either table as appointees who actually held appointments in the following academic year. Those fellowships and scholarships which are given on nomination by the Faculty of Arts and Sciences are the only ones here considered. In the corresponding tables given in my last annual report, the Gibbs Scholarship was included in the count. It is now excluded; and hence arises the change of a unit in some of the figures for the year 1891–92.

	In 1891–92.		In 1892–93.	
Spring applicants for reappointment or promotion . .	40		49	
Spring applicants for a first appointment	173		208	
Later applicants	38	251	44	301
Appointed to fellowships	21		19	
Appointed to scholarships	47		46	
Appointed instructors or assistants	17	85	15	80
Deduct for repetitions		8		7
		77		73
Entered, or continued in, Graduate School without any of the above-named appointments	43		62	
Entered undergraduate classes	13		9	
Entered Scientific School	0		1	
Entered professional schools	4	60	9	81
At the University in the year following application .		137		154
Not at the University		114		147
		251		301

	In 1891–92.		In 1892–93.	
	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology	76	24	108	21
Students of Philosophy, History, and Political Science	76	13	95	16
Students of Fine Arts, Architecture, etc.	2	1	2	1
Students of Mathematics, Physics, and Chemistry	51	19	47	15
Students of Natural History	33	11	42	12
Students in other branches, or proposing mixed courses, or without statement of purpose	13	0	7	0
	251	68	301	65
Students of the Graduate School at the time of application	69	31	78	43
Students of Harvard College at the time of application	38	8	59	6
Students of Lawrence Scientific School at the time of application	0	0	1	0
Students of Professional Schools at the time of application	6	2	2	1
Former students in some department of the University	21	9	20	5
Persons never previously connected with the University	117	18	141	10
	251	68	301	65
Harvard A.B.'s, S.B.'s, A.M.'s, Ph.D.'s, and S.D.'s, not also graduated elsewhere	40	21	47	23
Harvard A.B.'s, S.B.'s, A.M.'s, Ph.D.'s, and S.D.'s, previously graduated elsewhere	24	10	26	13
Graduates of other institutions, and not of Harvard University	125	28	168	25
Harvard undergraduates not already graduated elsewhere	24	5	31	4
Undergraduates of other institutions and other non-graduates	38	4	29	0
	251	68	301	65

It is gratifying to observe the increase, during the last few years, in the proportion of applicants who live in distant parts of the country and have never had any previous connexion with the University. Many of these applicants are professors, or instructors of lower grades, in other colleges, or hold established positions in school-work, and either have obtained leave of absence to pursue advanced studies here, or purpose to vacate their places altogether in order to enjoy the advantages of instruction in the Graduate School. The increase in the number of unsuccessful applicants who nevertheless come to the University as students is likewise noteworthy. Out of the one hundred and seven applicants of the year 1889–90, only eight came to the Graduate School without receiving appointments to fellowships, scholarships, or assistantships, and five others came to the University. These entered the Senior class, some of them doubtless having obtained the promise of Price Greenleaf Aid. Of the three hundred and one applicants of the year 1892–93, sixty-two, or more than twenty per cent, joined the Graduate School, though unsuccessful in obtaining any appointment, while nineteen entered other departments of the University. It is to be added that nine vacancies in scholarships have been filled since the beginning of the current academic year; so that the number of students who entered the School at the beginning of this year without having received any appointment is really greater than the above figures show.

The special importance of fellowships and scholarships to students in the Graduate School is, as I have reason to believe, inadequately understood by friends of the University. These students are not youths, maintained by relatives and friends while acquiring the elements of a liberal education; they are men, — sometimes married men, — who have already gone through the ordinary period of a costly education; and, as has already been pointed out, they have, in many cases, relinquished salaried positions in order to come to the School. Their motive in coming is not that they may gain entrance to a lucrative profession, or that they may obtain necessary preparation for the work of a teacher, — the career which many of them have in view. They are already qualified to do good service in their chosen field; but they are willing to make considerable sacrifices in order that they may do better service, and help to raise the tone of instruction and study throughout the country. To gratify their ambition of making themselves worthier of the place they design to fill in the world is doubtless in one sense a luxury; and such ambition is not to be encouraged in persons of indifferent powers or feeble constitution. But the man who has the consciousness of ability and strength is justified in regarding this costly undertaking as the fulfilment of a duty, if he can bring it within his power; and the highest interests of society surely require it to be accounted among the objects to be legitimately aided by public endowments. Most of those who come to the Graduate School have accumulated means to pay a year's expenses here, by the practice of great economy. But if they would look forward to a second year of study at the University, they must know that there is some fair hope of obtaining help; and for students of the best quality, a second year is often even more important than the first.

The University Scholarships, having an income of one hundred and fifty dollars, equivalent to the tuition-fee, which are maintained by the President and Fellows at the charge of the University, have proved to be a most important aid to the Graduate School. They have frequently afforded able students a degree of help which has made it possible for them to study at the University, when, without that help, such study would have been impossible. They have had at least the effect of offering welcome and encouragement to persons eager to come to us. But we need also a respectable provision of fellowships with incomes which may be regarded as liberal, such as will attract men of marked promise, will free those on whom such appointments are bestowed from anxieties which make the best intellectual work impossible, and will justify us in demanding of them entire devotion to study. The fellowships and higher scholarships have proved invaluable to us, in this regard. But we greatly need an increased number of such foundations; even though we do not seek to emulate the liberality, in this matter, of some of our sister Universities. I beg to commend this object to the attention of those who are disposed to aid the cause of higher learning by their benefactions.

The following is a list of the Fellowships belonging to the Graduate School, with the names of their incumbents for 1892–93, and of those appointed for 1893–94; *present holders*, whether reappointed or newly appointed, being indicated by a *hand* placed before the name:—

The Harris Fellowship.

Founded in 1868 by William Minot, jr., as executor of Henry Harris. To be given "to some graduate, of acknowledged excellence in one or more departments of literature or science (but not necessarily of the highest college rank), for one or more years." Marriage a disqualification. Studies for the professions of law, theology, and medicine excluded. Entire devotion to accurate scholarship or the higher branches of science required. The incumbent may be permitted to study abroad. Income $500.

For 1892–93:—

Allison Wing Slocum, A.B. (*Haverford Coll., Pa.*) 1888, A.M. (*Ibid.*) 1889, A.M. (*Harvard Univ.*) 1891. Res. Gr. Stud., 1890–92. I. year of incumbency. Held Tyndall scholarship as Res. Gr. Stud. in 1891–92. Studied *Mathematical Physics* at the University of Berlin.

Withdrew at the close of the academic year, and is now Professor of Mathematics at the State Normal College, West Chester, Pa.

Appointed for 1893–94:—

☞ Evarts Boutell Greene, A.B. 1890, A.M. 1891, PH.D. (History) 1893. Assistant in History 1891–93. Res. Gr. Stud.. 1890–93. Is studying *History and Political Science* at the University of Berlin.

The Rogers Fellowships.

Founded in 1869 by Henry Bromfield Rogers "for the encouragement and attainment of a higher, broader, and more thorough scholarship than is required or expected of undergraduates, in all sound literature and learning, except science strictly so called." Each incumbent must be a graduate of Harvard College, and must "engage in no studies designed to prepare him for a special profession, nor in any other business or occupation except that of a Proctor of the College, or an occasional examiner of some of the classes, at the request of the Corporation." Incumbents may be permitted to study abroad. Two fellowships now exist on this foundation, each having an income of $750.

For 1892–93: —

☞ **Richard Clarke Manning, Jr.**, A.B. 1888, A.M. 1892. Res. Gr. Stud., 1891–92. I. year of incumbency. Studied *Classical Philology* at the University of Bonn.

Reappointed for 1893–94, and now (II. year) continuing his studies at the University of Leipzig.

James Morton Paton, A.B. (*Univ. of City of New York*) 1883, A.B. (*Harvard Univ.*) 1884. Res. Gr. Stud., 1884–87. Professor of Latin and French, Middlebury Coll., Vt., 1887–91. I. year of incumbency. Studied *Greek Archaeology and Epigraphy* at the American School of Classical Studies at Athens.

Withdrew at the close of the year, and is now continuing his studies at the University of Bonn.

Appointed for 1893–94: —

☞ **George Andrew Reisner**, A.B. 1889, A.M. 1891, PH.D. (Semitic Languages and History) 1893. Assistant in Semitic Languages 1891–93. Res. Gr. Stud., 1890–93. I. year of incumbency. Is pursuing *Semitic Studies* at the University of Berlin.

The Parker Fellowships.

Founded in 1873 from the income of the bequest of John Parker, Jr. They may be held by graduates of Harvard College or any other Department of the University for a term not exceeding three years in any case. Every incumbent must devote himself to some special course of study approved by the Faculty of Arts and Sciences; he is restricted, during his tenure of the Fellowship, from pursuing the usual studies preparatory to a profession (but not necessarily from higher professional studies), and from occupation in teaching or active business. Mr. Parker's object was "to provide the most thorough education possible for persons who possess uncommon powers in any department of knowledge, or who give promise of developing such powers, but who have not at command the means of paying for a prolonged and costly training." Incumbents may study abroad, if they prefer. There are four Parker fellowships, each having an income of $700.

For 1892–93: —

Jonathan Brace Chittenden, S.B. (*Worcester Poly. Inst.*) 1888, A.B. *Harvard Univ.*) 1889, A.M. (*Ibid.*) 1890. Res. Gr. Stud., 1889–91; Non-Res. Gr. Stud., 1891–92. I. year of incumbency. Held the Kirkland fellowship in 1891–92. Studied *Mathematics* both years at the University of Königsberg, where he received the degree of PH.D. in 1893.

Withdrew at the close of the year, and is now Instructor in Mathematics in the College of New Jersey, Princeton, N. J.

George Howard Parker, S.B. 1887, S.D. (Zoölogy) 1891. Assistant in Zoölogy, 1887–88; Instructor in Zoölogy, 1889–91. Res. Gr. Stud., 1887–91. II. year of incumbency and as a Non-resident Student. Studied *Zoölogy* at the University of Freiburg im Breisgau.

Withdrew at the close of the year, and is now again an Instructor in Zoölogy at this University.

☞ George James Peirce, S.B. 1890. Assistant in Botany, 1890–92. Res. Gr. Stud., 1890–92. I. year of incumbency. Studied *Botany* at the University of Bonn.

Reappointed for 1893–94, and now (II. year) continuing his studies at the University of Leipzig.

James Brown Scott, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–91. II. year of incumbency and as a Non-Resident Student. Studied *International Law and Diplomacy* at the University of Heidelberg, but was compelled by illness to break off his work before the close of the year.

He withdrew at the close of the year.

Appointed for 1893–94: —

☞ George Ashley Campbell, S.B. (*Mass. Inst. of Tech.*) 1891, A.B. (*Harvard Univ.*) 1892, A.M. (*Ibid.*) 1893. Res. Gr. Stud., 1891–93. Is studying *Mathematics* at the University of Göttingen.

☞ Walter Louis Jennings, A.B. 1889, A.M. 1890, PH.D. (Chemistry) 1892. Assistant in Chemistry 1889–92. Res. Gr. Stud., 1889–92. Is studying *Chemistry* at the University of Berlin.

☞ Raymond Leslie Weeks, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–91. Instructor in Romance Languages, 1891–93, University of Michigan. Is studying *Romance Philology* at Paris.

The John Thornton Kirkland Fellowship.

Founded in 1873 by George Bancroft. The incumbent must, as a rule, have resided at least three years at the University as a member either of the College or of one of the Schools. The fellowship may be held for three years, and no longer. It may be awarded to "any young person likely to distinguish himself in either of the learned professions, or in any branch of Science, or in Architecture, Sculpture, Painting, Music, or Letters." The incumbent may study abroad, if he prefer. Yearly income now $550.

☞ Hugh Tallant, A.B. 1891, A.M. 1891. I. year of incumbency and as a student in the School. Studying *Architectural Design* at the École des Beaux Arts at Paris.

Reappointed for 1893–94; and now (II. year) continuing his studies at the same school.

The James Walker Fellowship.

Established in 1881 by gift of the friends and pupils of the late President Walker, the preference to be given to a student of ethics, metaphysics, and those related branches of knowledge to which Dr. Walker chiefly devoted his life. Income $500.

☞ PITT GORDON KNOWLTON, A.B. (*Oberlin Coll., O.*) 1890, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. I. year of incumbency. Studied *Philosophy* at this University.

Reappointed for 1893–94, with leave to study abroad; and now (II. year) continuing his studies at the University of Berlin.

The Morgan Fellowships.

Maintained by the President and Fellows from the unrestricted bequest of Henry T. Morgan of New York. Their number and income are subject to variation from year to year. They were first established in 1884, for persons undertaking advanced studies in the departments in which the degrees of Doctor of Philosophy and Doctor of Science are given. The applicant need not have received or be a candidate for any academic degree, but must exhibit proof of such previous training, attainments, and capacity, as promise special fitness for the work which he undertakes. Residence required, and the holder forbidden to engage in any occupation but study, except such public instruction as may have been approved by the Faculty of Arts and Sciences. Term, one year; but the holder is eligible for second appointment. In the year 1892–93, there were six of these fellowships with an income of $500 each, and two with an income of $400. For the current year, two of the six first named have been discontinued.

For 1892–93:—

WILLIAM JAMES BATTLE, A.B. (*Univ. of North Carolina*) 1888, A.M. (*Ibid.*) 1889, PH.D. (*Ibid.*) 1890, A.M. (*Harvard Univ.*) 1891. Res. Gr. Stud., 1890–93. II. year of incumbency. Studied *Classical Philology* at this University. Received the degree of PH.D. at the close of the year.

Withdrew at the close of the year; and is now Professor of Greek at the University of Texas.

ALEXANDER LEE BONDURANT, A.B. (*Hampden Sidney Coll., Va.*) 1884, A.M. (*Ibid.*) 1892. Associate Professor of Latin and Greek at the University of Mississippi, on leave of absence. Res. Gr. Stud., 1892–93. I. year of incumbency. Studied *Classical Philology* at this University. Received the degree of A.M. at the close of the year.

Reappointed for 1893–94; but withdrew later, to return to the duties of his professorship at the University of Mississippi. He is registered this year as a Non-Resident Student in the Graduate School.

WILLIAM WALLACE CLENDENIN, S.B. (*Univ. of State of Missouri*) 1886, S.M. (*Ibid.*) 1889, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. I. year of incumbency. Studied *Geology* at this University.

Reappointed for 1893–94; but withdrew later, to accept the position of Professor of Geology at the Louisiana State University.

ROBERT WILSON CORNELISON, S.B. (*Univ. of Illinois*) 1890. Res. Gr. Stud., 1891–93. I. year of incumbency. Studied *Chemistry* at this University. Received the degree of S.D. at the close of the year.

Withdrew at the close of the year; and now holds a professional position as a chemist at Brooklyn, N. Y.

Herbert Darling Foster, A.B. (*Dartmouth Coll., N. H.*) 1885, A.M. (*Ibid.*) 1888, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. II. year of incumbency. Studied *History* at this University.

Withdrew at the close of the year, having been elected Professor of History at Dartmouth College. He is now in Europe, and is to enter on the duties of his professorship in 1894.

☞ **James Waterman Glover**, L.B. (*Univ. of Michigan*) 1892. Res. Gr. Stud., 1892–93. I. year of incumbency. Studied *Mathematics* at this University.

Reappointed for 1893–94, and now (II. year) continuing his studies here.

☞ **David Franklin Houston**, A.B. (*So. Carolina Coll.*) 1887, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. I. year of incumbency. Studied *History and Political Science* at this University.

Reappointed for 1893–94, and now (II. year) continuing his studies here.

Arthur Henry Pierce, A.B. (*Amherst Coll.*) 1888, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. I. year of incumbency. Studied *Philosophy* at this University.

Withdrew at the close of the year, but is continuing his studies in Philosophy as a Resident Student in the Graduate School.

Appointed for 1893–94: —

☞ **Harry Sands Grindley**, S.B. (*Univ. of Illinois*) 1888. Res. Gr. Stud. and Asst. in Chemistry, 1892–93. Studying *Chemistry* at this University.

☞ **Charles Atwood Kofoid**, A.B. (*Oberlin Coll., O.*) 1890, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. Studying *Zoölogy* at this University.

☞ **Paul Elmer More**, A.B. (*Washington Univ., Mo.*) 1887, A.M. (*Ibid.*) 1891, A.M. (*Harvard Univ.*) 1893. Res. Gr. Stud., 1892–93. Studying *Classical and Indo-Iranian Languages* at this University.

☞ **William Henry Schofield**, A.B. (*Victoria Univ., Ont.*) 1889, A.M. (*Harvard Univ.*) 1893. Past Instructor, Hamilton College Institute, Ont. Res. Gr. Stud., 1892–93. Studying *English and Modern Philology* at this University.

The John Tyndall Scholarship.

Founded in 1885 by Professor John Tyndall. For the support or assistance of "one or more American pupils who may have shown decided talents in Physics, and preferably such as shall express the determination to devote their lives to the advancement of theoretic science and original investigation in that department of learning." Each incumbent must be "either a graduate or a student in some department of Harvard University, but not necessarily a candidate for a degree." Study to be carried on "at such places in America or at such European Universities as may be considered most desirable." Income $500.

For 1892–93: —

Edgar Buckingham, A.B. 1887. Res. Gr. Stud., 1887–89. Asst. in Physics, 1888–89. Studied *Physical Chemistry* at the University of Leipzig, where he took the degree of PH.D.

Withdrew at the close of the year, and is now Assistant Professor of Physics at Bryn Mawr College, Pa.

Appointed for 1893–94: —

☞ Charles Edward St. John, s.b. (*Michigan Agric. Coll.*) 1887, a.m. (*Harvard Univ.*) 1893. Assistant in Physics, 1886–92, Michigan State Normal School. Res. Gr. Stud., 1892–93. Studying *Physics* as a Resident Graduate Student at this University.

The Robert Treat Paine Fellowship of Social Science.

Founded in 1887 by Robert Treat Paine. To be awarded "to one or more graduates of any department of the University, wishing to study either at home or abroad the ethical problems of society, and the efforts of legislation, governmental administration, and private philanthropy, to ameliorate the lot of the masses of mankind." Income $500.

This fellowship was vacant in 1892–93; being temporarily divided into two scholarships.

Appointed for 1893–94: —

☞ Carlos Carleton Closson, Jr., a.b. 1892, a.m. 1893. Res. Gr. Stud., 1892–93. Studying *Economics and Sociology* at this University.

The Memorial Fellowships.

Founded in 1889 by Willian S. Bullard in grateful and affectionate remembrance of three friends. They may, at the discretion of the Faculty of Arts and Sciences, be held by graduates either of this University or of others, and either by Resident Students at this University or by persons studying abroad.

The Henry Lee Memorial Fellowship.

For the study of Political Economy.

For 1892–93: —

William Hill, a.b. (*Kansas State Univ.*) 1890, a.b. (*Harvard Univ.*) 1891, a.m. (*Ibid.*) 1892. Res. Gr. Stud., 1891–93. II. year of incumbency and as a student in the School. Studied at this University.

Withdrew at the close of the year, and is now Instructor in Political Economy at the University of Chicago.

Appointed for 1893–94: —

☞ George Ole Virtue (transferred from the Ozias Goodwin Memorial Fellowship).

The Ozias Goodwin Memorial Fellowship.

For the study of Constitutional and International Law.

For 1892–93: —

George Ole Virtue, a.b. (*Kansas State Univ.*) 1892, a.b. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1892–93. I. year of incumbency. Studied at this University. Received the degree of a.m. at the close of the year.

For 1893–94, was transferred to the Henry Lee Memorial Fellowship, which he how holds, continuing his studies at this University.

Appointed for 1893–94: —

☞ George Daniel Hammond, a.b. 1893. I. year as a student in the School. Studying at the University of Berlin.

The Henry Bromfield Rogers Memorial Fellowship.

For the study of Ethics in its relations either to Jurisprudence or to Sociology.

For 1892–93:—

EDWARD LEEDS GULICK, A.B. (*Dartmouth Coll., N. H.*) 1883, A.M. (*Ibid.*) 1886. Res. Gr. Stud., 1892–93. I. year of incumbency. Studied at this University. Withdrew at the close of the year, and is now Master of English at the Lawrenceville School, Lawrenceville, N. J.

No appointment to this fellowship has yet been made for the year 1893–94.

In my last annual report, I called attention to the desirableness of a revision of the *Standing Votes* of the Corporation and Overseers relating to the degrees of A.M., Ph.D., and S.D. The Faculty of Arts and Sciences have, since that time, at the instance of the Administrative Board of the Graduate School, made a recommendation on this subject to the Governing Boards. I hope, therefore, that a simplification of these Votes, with such changes as are necessary to adjust them to existing circumstances, may soon be effected. It appears to me that the Statutes should contain all that it is desirable to establish as a matter of permanent law. Anything beyond what is embodied in the Statutes ought to admit alteration with reasonable facility, and should be, as far as possible, in the hands of the Faculty. If the result of the present discussion shall be to rescind the Standing Votes altogether, with any slight modification of the Statutes which may then seem to be called for, such solution would commend itself to my judgment as a happy one.

In concluding my report I beg to call the attention of all friends of learning to the importance and value of this growing department of Harvard University. The Graduate School is one of a small number of places of study in America at which young men can prepare themselves in a thorough manner for a life-work of higher scholarship. The importance of such scholarship to the intellectual well-being of our country; its necessary dependence on the existence of a class of men whose professional object it is to develop it, rather than to be mere teachers, or middlemen in the work of progress, of however dignified a quality; and the need of profound preparation for so advanced and responsible a task have become widely and deeply felt. Able young men in all regions of the United States are questioning what they can do to take part in this development. They are weighing the merits of different universities which offer opportunities of graduate work, and carefully laying up the means to pursue studies at some one of them. Such men are indifferent to the ordinary attractions of student life, to those showy features of a college which fill the greatest space in a superficial or frivolous imagination; they are looking for the deepest learning in some special field, — for the best libraries, collections, laboratories, — for the most thorough and advanced programme and method of instruction, — for the most active intellectual life, — for perfect academic freedom.

We may well congratulate ourselves that this University is able to attract so goodly a number of the young men here described. It is, in fact, through its Graduate School that it now makes its chief appeal, as an institution of pure learning, to the country at large, and holds a position of nationality. Out of the two hundred and forty-five resident students of the School for the current academic year, one hundred and fifty-eight, or nearly two-thirds, are graduates of other institutions, (many of them having, indeed, also taken the degree of A.B. here), or have, without graduating, pursued elsewhere the studies on the ground of which they have been admitted to the School; and one hundred and thirty, or more than one half, come from homes outside of New England, — eighty-two living in eastern, southern, and central states, thirty-three in states beyond the Mississippi River, nine in the Dominion of Canada, and six in foreign countries. It is to be added that the Graduate School has had an undoubted influence in broadening the membership of the College itself. Not a few students who have been drawn to the University by the attraction of the Graduate School find it advisable to enter, in the first instance, one of the higher undergraduate classes, in order to complete their preparation for the School; and many members of the School, impressed with the advantages which Harvard College has to offer, urge their younger friends at home to come to the College. There can be no doubt that a perceptible share of the recent prosperity of the College is due, in this and other ways, to the Graduate School.

The good effect of the Graduate School on the College is also of a direct kind, coming from the presence in the more advanced class-rooms of a considerable proportion of young men of maturity and high ability, full of the spirit of independent work and of a sense of the value and meaning of learning; and from the influence exerted by such men outside of the class-rooms throughout the University. The School is, indeed, the necessary supplement of the College as the College now exists. It is the logical outcome and the crowning feature of that elective system, which has so raised the level of scholarship at Harvard in the course of the last twenty years; out of which has grown its great programme of instruction and its advantages for higher study; which is the true ground of its noble growth in numbers; and which has given it its wide and honorable fame. But the most commanding and important function of the Graduate School is to afford opportunity for that work which is the highest duty of every university, and without which no institution is rightly called a university, — the work of advancing knowledge by the original researches and the joint labors of its professors and its students. This work is the final test which must fix the position of an institution of learning in the judgment of the civilized world; and in this work, we are able, through the medium of the Graduate School, to bear some not unworthy share.

JAMES MILLS PEIRCE, *Dean*.

December 1893.

THE DIVINITY SCHOOL.

To the President of the University:

Sir, — In the absence of Dean Everett, I beg to submit the following report for the academic year 1892–93: —

Forty-one students were connected with the Divinity School, as follows: —

Resident Graduates	15
Senior Class	5
Middle Class	4
Junior Class	8
Special Students	9

Nine Theological Schools were represented in the Graduate Department, namely: —

Bangor	1	Harvard	1
Boston	4	Meadville	5
Cambridge Episcopal	1	Union Theol. Seminary	1
Doshisha	2	Yale	1
Drew	1		

Twenty-two Colleges and Universities were represented in the School, namely: —

Adrian	1	Harvard	9
Baldwin	1	Lebanon Val.	1
Bangor	1	Ohio Wesleyan	1
Bowdoin	3	Southern Ill. Coll.	1
Brown	1	Trinity College	1
Colby	1	University of the City of New York	1
Cornell	1	University of Illinois	1
Doshisha	2	University of Michigan	1
Dublin	1	University of Wisconsin	1
Edinburgh	1	Wake Forest Coll.	1
Eureka	1	Yale	1

The following Courses of Instruction were given in the School: —

COURSES OF INSTRUCTION, 1892–93.

OLD TESTAMENT.

Professor **Lyon** and Mr. **Reisner**. — Hebrew (First Course). — Half of Genesis, fifteen Psalms, and (at sight) several chapters selected from different books. 3 hours. 7 Col., 3 Div.

Professor **Lyon**. — Revised version of the Old Testament. — Graetz, History of the Jews. — Stanley, Lectures on the Jewish Church. — History of Israel, political and social from the establishment of royalty till the death of Herod the Great. 2 hours. 88 Col., 8 Div.

Professor **Lyon** and Mr. **Reisner**. — Assyrian (First Course). — Lyon's Assyrian Manual (the Grammar and most of the selections). — Abel and Winckler's Keilschrifttexte. — Practice in copying and reading originals in the Semitic Museum. 2 hours. 3 Col., 1 Div.

Professor **Toy**. — Hebrew (Second Course). — Syntax. — Interpretation of parts of the Prophets and the poetical books. — Text criticism. 2 hours. 4 Col., 2 Div.

Professor **Toy**. — History of pre-Christian Hebrew Literature. Weekly themes. 4 hours. 1st half-year. 9 Col., 7 Div.

Professor **Toy**. — History of the Hebrew Religion, with comparison of other Semitic Religions. Weekly themes. 2 hours. 3 Col., 3 Div.

NEW TESTAMENT.

Professor **Thayer**. — New Testament Times (First Course). 19 Div.

Professor **Thayer**. — Encyclopaedia, Textual Criticism, Gospel of John, etc. (Second Course). 6 Div.

Professor **Thayer**. — New Testament Introduction and Formation of the Canon (Third Course). 17 Div.

Professor **Thayer**. — Lectures on the Life of Paul and cursory reading of his Epistles (Fourth Course). 2 Div.

Professor **Thayer**. — Biblical Theology. — History and Principles of Biblical Interpretation (Fifth and Sixth Course). 6 Div.

CHURCH HISTORY.

Professor **Emerton**. — The Middle Ages from Charlemagne to Dante. — Foundation of the European States. — The Holy Roman Empire. — The Roman Papacy as the controlling force in European Life. 3 hours. 2d half-year. 104 Col., 5 Div.

Professor **Emerton**. — The Era of the Reformation in Europe from the rise of Italian Humanism to the close of the Council of Trent, 1350–1563. 2 hours. 16 Col., 1 Div.

Professor **Emerton**. — The First Eight Christian Centuries. — The Conflict of Christianity and Paganism. — Origin and Development of the Roman Papacy to its alliance with the Frankish State. — The Germanic Races as the Basis of a new Christian Civilization. 2 hours. 35 Col., 8 Div.

Professor Emerton. — Advanced Study and Research in connection with the Seminary in Mediaeval History. Special topic: Relations of Church and State. 1 hour. 4 Col.

COMPARATIVE RELIGION.

Professor Everett. — Studies in the Comparative History of Religions, particularly the Vedic Religion, the Hindu Philosophies, Buddhism, Mazdaism, and the Chinese Religions. 2 hours. 18 Col., 13 Div.

THEOLOGY.

Professor Everett. — Systematic Theology begun: The Psychological basis of Religious Faith. 1 hour. 16 Col., 14 Div.

Professor Everett. — Systematic Theology continued: The Content of Christian Faith. 3 hours. 2 Col., 10 Div.

ETHICS.

Professor Peabody. — The Practical Ethics of Social Reform. — An examination of the problems of Charity, Temperanc, Labor, Divorce. — Lectures, Essays, and the study of Institutions. 3 hours. 112 Col., 21 Div.

HOMILETICS AND PASTORAL CARE.

Mr. Hale. — The Structure and Analysis of Sermons. 1 hour. 8 Div.

Professor Peabody. — Each student writes six sermons during the year, three of which are preached before the two upper classes and criticised by students and Instructor; the rest are criticised privately, both as to composition and delivery, and are preached at a weekly religious exercise of the School which is open to the public. 2 hours. 12 Div.

Professor Peabody. — Pastoral Care and the conduct of Christian Worship. — Lectures. 1 hour. 15 Div.

ELOCUTION.

Professor Churchill was at the School throughout the year on Mondays for six hours. He met some of the students individually, some in small sections, and held a general exercise in Vocal Culture from 4.30 to 5 P.M. He was also present at Homiletics II., to assist in criticism. 23 Div.

GENERAL EXERCISES.

Every Friday evening there was preaching in the Chapel of the School by students. This was open to the public. — Meetings for Religious Conference, conducted by the students, were held once in two weeks. — The meetings of the Debating Club alternated with the above. — Daily Prayers, conducted by students and teachers.

It will be seen that the full staff of the School was in service this year. The work of the year was much strengthened also by the appointment of the Librarian, Rev. Robert S. Morison, as Secretary of the Faculty, and the assignment of administrative details to his scrupulous care. During the past year important changes have been made in Divinity Hall. Steam heat has been introduced from the Library Building into the hallways and the Chapel and excellent bathrooms have been added on the two lower floors, so that the dormitory of the School is now thoroughly convenient and agreeable. A change has also been made in the renting of rooms in Divinity Hall. For some years they have been disposed of through the Bursar on the same terms as other College dormitories and have been largely occupied by students not members of the School. The Faculty has felt that this tended to lessen the unity of the School and voted, at the risk of some loss in rent, to reserve the whole of Divinity Hall for students of the School until the beginning of the academic year. Owing to the growth of the School this change has been made without serious loss, and is to our social and professional advantage. A difficulty has been felt in the School as to the hour of Daily Prayers, which for some years have been conducted at the same hour with the College service in Appleton Chapel. Now that the University service is voluntary, and is made attractive by the presence of various distinguished preachers, it has seemed most unfortunate that the only students that could not share in the service were students for the ministry. The opinion of each student was procured in writing and by common consent the hour of Prayers in the School was transferred from 8.45 A.M. to 6.45 P.M. Divinity students are now expected to attend the University service in the morning and their own more domestic service in the evening.

Two subjects of interest are suggested by the statistics of this report. First, they seem to indicate the place and destiny of the School. It cannot longer be described with justice as a denominational School, for both its Faculty and its students are now of very various communions. It cannot even be classified with other theological schools, for its liberty of election among studies is exceptional, and it does not require for its degree a fixed amount of any one theological study. In the proportion of resident graduates to the total number of students — 15 out of 41 — and in the number of colleges represented — twenty-two — the School is probably unique. Its relation to the other departments of the University is as exceptional, the majority of the courses of the Divinity School being open to the students of other departments and largely attended by them. The standard of scholarship maintained has for some years been superior to that of any other professional school in the University, the A.B. degree being the pre-requisite of the B.D. degree. All these facts point to a special work for the School to do. It can hardly expect to be a large or popular School. The denominational schools are likely for the present to offer the straightest and easiest course for the average student to enter the denominational ministries. It is, therefore, not worth while for this School to attempt competition with other schools in point of number or of buildings or of subsidies to students. It can afford to lead the way in the reform of mendicant tendencies in theological education. What its position calls for and makes possible is the provision of exceptional opportunity for scientific and advanced theological study. It has the peculiar advantage of a University School, and of liberty of academic thought and utterance. It already appears from the character of our students that this position and intention are recognized. Students are coming to us who have completed their training in a denominational school and who wish for further discipline under a University method. Scarcely any other school has this special power of attraction for advanced students. To many institutions and teachers of theology this development of free and scientific study still seems dangerous to faith. The present quality of scholarship and of piety in the students of the School is a sufficient defense of its position.

One other subject deserves special consideration. It appears from the statistics given above, that the Faculty of the Divinity School, while instructing forty-one students of the School, gave instruction and examination in 1892–93 to no less than four hundred and twenty-one students of other departments of the University. This is a great change in the function of the Divinity Faculty. It is a change which has come about without deliberate agreement on their part. It has simply happened that the courses of the School have seemed adapted to general culture and, being announced in the general pamphlet of elective courses, have proved attractive. This change, however, brings with it serious results. It transfers most of the Professors of the School from strictly professional service to duty in the Faculty of Arts and Sciences. It demands of some of them more time and service for students not in the School than for its members. More than all, it calls for a somewhat different frame of mind in the instructor, the adaptation of instruction to non-professional, often younger, and sometimes indifferent minds. On the other hand this extension of instruction may be regarded as of advantage, both to the School and to the University. It brings a much larger body of students under the instruction of this Faculty and extends its influence where it would not otherwise reach. It is a considerable contribution made by this Faculty to the general teaching force of the University, and it is made with a generosity which no other professional Faculty exhibits. It does not appear to me suitable in this report, which is presented in the absence of the Dean, to discuss whether this tendency in our instruction is for good or harm, or to propose a practical way of controlling it. It should however be recognized as a marked and a new tendency, quite different from the policy of the other professional Schools of the University, and sacrificing to some extent the solidarity of professional teaching and departmental life to the demands of general service for the University at large.

The following tabular statement shows the changes in the Library for the year ending September 30, 1893: —

	Vol.	Pam.
In the Library, Oct. 1, 1892	24,027	4,500
Added by purchase, Oct. 1, 1892, to Sept. 30, 1893 . .	470	8
Added by gift, Oct. 1, 1892, to Sept. 30, 1893	188	306
	25,685	4,814
Less duplicates sold	120	6
	24,565	4,808
Increase in volumes, decrease in pamphlets by binding	28	283
In the Library, Oct. 1, 1893	24,593	4,525

During the year 1816 titles were catalogued in the author catalogue, and 655 in the subject catalogue; and a shelf list was made for the whole Library so far as it has been fully catalogued, covering something over 18,000 volumes. Contrary to the custom of former years, no work was done during the summer vacation. From Oct. 1, 1892 to Sept. 30, 1893 there were borrowed from the stack for home use 1083 volumes, and for hall use 221 volumes; and from the reserved books for over-night use 594 volumes. Our record of the use of the Library covers only the last four years. During this time the annual number of volumes borrowed for home use shows a constant increase; this number for last year is 30 per cent larger than that of the year before.

FRANCIS G. PEABODY, *Acting Dean.*

THE LAW SCHOOL.

To the President of the University:

Sir, — I beg to submit the following report upon the Law School for the academic year 1892–93: —

The table on p. 134 gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

Instructors.	Studies and Text-books.	Exercises per week.	No. of students examined.
	First Year.		
Prof. Wambaugh and Prof. Williston	Contracts. Langdell's Cases on Contracts	3	161
Prof. Gray and Prof. Beale	Property. Gray's Cases on Property, vol. 1, 2	2	154
Prof. Smith	Torts. Ames's Cases on Torts	2	158
Prof. Wambaugh and Prof. Williston	Civil Procedure at Common Law. Ames's Cases on Pleading	1	150
Prof. Beale	Criminal Law and Procedure. Chaplin's Cases on Criminal Law	2	159
	Second Year.		
Prof. Wambaugh	Agency. No text-book	2	73
Prof. Williston	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	62
Prof. Beale	Carriers. No text-book	2	47
Prof. Ames	Contracts. Keener's Cases on Quasi-Contracts	2	64
Prof. Thayer	Evidence. Thayer's Cases on Evidence.	2	108
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	21
Prof. Gray	Property. Gray's Cases on Property, vol. 3, 4	2	128
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	41
Prof. Ames	Trusts. Ames's Cases on Trusts (new edition)	2	104
	Third Year.		
Prof. Thayer	Constitutional Law. No text-book	2	85
Prof. Smith	Corporations. Cumming's Cases on Corporations	2	76
Prof. Langdell	Jurisdiction and Procedure in Equity. No text-book	2	34
Prof. Ames	Partnership. Ames's Cases on Partnership	2	46
Prof. Gray	Property. Gray's Cases on Property, vol. 5, 6	2	31
Prof. Langdell	Suretyship and Mortgage. No text-book	2	14
Prof. Wambaugh	Agency. No text-book	2	13
Prof. Williston	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	38
Prof. Beale	Carriers. No text-book	2	22
Prof. Ames	Contracts. Keener's Cases on Quasi-Contracts	2	9
Prof. Thayer	Evidence. Thayer's Cases on Evidence.	2	4
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	4
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	15
Prof. Ames	Trusts. Ames's Cases on Trusts (new edition)	2	3
Prof. Gray	Property II. Gray's Cases on Property, vol. 3, 4	2	4

The following table exhibits the attendance at the School during the last twenty-three years: —

Year.	Whole no. of students.	No. present during the whole year.	No. present only part of the year.	Average number.
1870–71	165	107	58	136
1871–72	138	107	31	123
1872–73	117	109	8	113
1873–74	141	121	20	131
1874–75	144	130	14	137
1875–76	173	153	20	163
1876–77	199	168	31	184
1877–78	196	172	24	183
1878–79	169	137	32	154
1879–80	177	138	39	157
1880–81	161	136	25	149
1881–82	161	139	22	146
1882–83	138	120	18	129
1883–84	150	130	20	140
1884–85	156	139	17	148
1885–86	158	142	16	151
1886–87	188	160	28	174
1887–88	225	197	28	211
1888–89	225	198	27	212
1889–90	262	229	33	245
1890–91	285	255	30	272
1891–92	370	337	33	354
1892–93	405	369	36	388

The following table exhibits the School as divided into classes since the establishment of the three-years' course and the examination for admission: —

Year.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
First	72	63	78	57	61	59	58	75	55	75	89	74	90	106	143	140
Second	79	50	32	58	41	38	40	37	46	47	55	66	59	73	112	119
Third	.	.	21	14	25	20	22	17	17	24	33	27	52	45	48	70
Special Students	31	47	46	32	34	21	30	28	40	42	46	58	62	61	67	76

In regard to the last table, it is to be observed that, although the three-years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three-years' course, but was graduated at the end of the second year, that class having entered the School before the three-years' course went into operation.

The following table exhibits the results of the examinations for admission in each year since they were established: —

	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Offered	16	15	18	25	19	12	12	17	17	14	33	15	20	28	38	64
Admitted	7	7	12	13	16	10	5	11	7	6	17	11	10	11	18	36

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three-years' course: —

Year.	First year.			Second year.			Third year.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
1877–78	66	51	15	66	47	19	.	.	.
1878–79	50	42	8	40	39	1	.	.	.
1879–80	73	69	4	28	26	2	22	18	4
1880–81	45	43	2	49	46	3	18	18	0
1881–82	49	44	5	38	37	1	36	33	3
1882–83	46	44	2	36	34	2	21	19	2
1883–84	51	41	10	35	31	4	26	25	1
1884–85	61	56	5	30	29	1	23	19	4
1885–86	54	48	6	41	38	3	18	18	0
1886–87	66	59	7	40	38	2	26	26	0
1887–88	80	70	10	43	34	9	33	32	1
1888–89	72	66	6	58	55	3	30	29	1
1889–90	86	75	11	52	49	3	51	47	4
1890–91	107	102	5	62	54	8	47	46	1
1891–92	134	130	4	100	91	9	62	55	7
1892–93	139	129	10	113	101	12	71	67	4

In regard to the foregoing table it is to be observed that it includes no Special Students, and hence that all the applicants included in it were either graduates of colleges or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877–78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the number of students who have received the honor degree in each year since it was established: —

1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.
7	3	10	10	5	5	7
1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
9	9	12	14	17	11	19

The following table exhibits the number of students who, since the establishment of the three-years' course, have been examined for a degree in the studies of any year without having been members of the School during that year: —

Year.	First year.			Second year.			Third year.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
1877–78	5	2	3	.	.	.	.	.	.
1878–79	3	2	1	.	.	.	.	.	.
1879–80	6	4	2	1	1	0	5	4	1
1880–81	6	4	2	.	.	.	4	4	0
1881–82	2	1	1	.	.	.	10	8	2
1882–83	3	3	0	.	.	.	3	2	1
1883–84	7	6	1	.	.	.	3	3	0
1884–85	3	2	1	.	.	.	6	4	2
1885–86	4	3	1	.	.	.	2	2	0
1886–87	3	3	0	.	.	.	4	4	0
1887–88	5	3	2	1	0	1	2	2	0
1888–89	12	8	4	.	.	.	3	3	0
1889–90	7	6	1	.	.	.	.	.	.
1890–91	11	9	2	1	0	1	1	1	0
1891–92	13	11	2	.	.	.	3	3	0
1892–93	15	9	6	2	1	1	3	2	1

The following table exhibits the number of students who have entered the School in each year during the last twenty-three years, and shows how many of them were graduates of colleges; and of the latter, how many were graduates of Harvard and how many of other colleges: —

Year.	Whole number of entries.	Graduates of colleges.	Harvard graduates.	Graduates of other colleges.	Non-graduates.
1870–71	105	60	19	41	45
1871–72	92	56	26	30	36
1872–73	87	47	22	25	40
1873–74	95	58	29	29	37
1874–75	102	55	40	15	47
1875–76	119	67	39	28	52
1876–77	128	77	47	30	51
1877–78	111	79	47	32	32
1878–79	102	62	38	24	40
1879–80	124	76	59	17	48
1880–81	91	60	41	19	31
1881–82	97	53	29	24	44
1882–83	84	56	33	23	28
1883–84	86	61	47	14	25
1884–85	101	79	56	23	22
1885–86	88	60	35	25	28
1886–87	113	80	46	34	33
1887–88	134	82	52	30	52
1888–89	111	77	50	27	34
1889–90	153	102	66	35	52
1890–91	160	107	65	42	53
1891–92	211	132	59	73	79
1892–93	223	128	58	70	95

The following table exhibits the average age at which students have entered the School in each year since 1873–74, that being the first year in which a record of ages was kept; also the age at which Harvard graduates, graduates of other colleges, and non-graduates respectively, have entered the School in each year since 1873–74; also the average age at which students have entered the School during the whole period since 1873–74; also the average age at which Harvard graduates, graduates of other colleges, and non-graduates respectively, have entered the School during the whole period since 1873–74: —

Year.	Of whole number of entries.	Of Harvard graduates.	Of graduates of other colleges.	Of non-graduates.
1873–74	23.34	23.58	23.76	22.83
1874–75	22.71	23.66	22.78	21.88
1875–76	22.98	22.35	23.28	23.28
1876–77	22.83	22.83	22.49	21.76
1877–78	23.34	23.25	23.83	22.97
1878–79	22.56	23.14	22.88	21.81
1879–80	23.20	23.46	22.77	23.02
1880–81	22.36	22.66	23.11	21.50
1881–82	22.68	23.06	23.73	21.85
1882–83	22.73	22.94	23.12	22.13
1883–84	22.64	23.17	22.86	21.53
1884–85	22.68	23.33	22.10	21.65
1885–86	22.73	23.21	22.84	22.03
1886–87	22.90	23.31	24.00	21.50
1887–88	22.86	23.33	23.42	22.07
1888–89	23.07	23.26	23.84	22.23
1889–90	22.91	23.19	22.88	22.42
1890–91	23.29	23.57	23.20	23.03
1891–92	22.68	22.80	23.63	21.71
1892–93	23.07	23.56	23.56	22.42
1873–74 to 1892–93	22.87	23.21	23.30	22.22

In respect to the growth of the School, the year under review, if compared with the year 1891–92, must be considered a poor year; and yet, if judged by any other standard, the growth which it exhibits (34) is very satisfactory. Indeed, only two years exhibit a greater absolute growth, namely, 1887–88 (37) and 1891–92 (82); and yet, in the space of five years, namely, from 1886–87 to 1891–92, the School more than doubled in size. It is within the last six years, namely, from 1886–87 to 1892–93, that the great growth of the School has wholly taken place, the number of students in 1885–86 (151) having exceeded by 15 only the number in 1870–71 (136); and how solid that growth has been may be judged by the fact that, during those six years, the number of students who remained in the School only a part of the year increased by 8 only, namely, from 28 in 1886–87 to 36 in 1892–93.

The increase of students in the year under review was distributed among the second and third year classes and special students, the first year class being smaller by 3 than that of 1891–92, which latter was, however, larger by 37 than that of any previous year. The second year class was larger by 7 than that of 1891–92, which was larger by 39 than that of any previous year. The third year class was larger by 22 than that of 1891–92 (70 — 48 = 22), — an increase which was less by 2 only than the entire third year class in 1886–87, and greater by 5 than the entire third year class in 1885–86.

The current year can be compared with the year under review, in respect to the sizes of the different classes, only by taking the annual Catalogues as a standard, and, according to that standard, the first year class has increased in the current year by 6 (141 — 135 = 6) and the second year class by 5 (124 — 119 = 5), while the third year class has decreased by 3 (69 — 66 = 3) and the special students have dropped from 71 to 22. The small increase in the first year class is in the face of the fact that, in the current year for the first time, the examination for admission has embraced two languages instead of one; and the effect of this change may be judged by the fact that, upon its taking effect, the number of students who offered themselves for examination dropped from 64 to 35, while the number who passed the examination dropped from 36 to 20. The great decrease in the numbers of special students is explained by the fact that, in the current year for the first time, special students, as well as candidates for a degree, if not graduates of colleges, have been required to pass the admission examinations.

The number of students who entered the school in the year under review was 223, being an increase of 12 over the number who entered in 1891–92, and the number who entered in 1891–92 (211) was greater by 51 than in any previous year, thus making an increase of 63 in the number of new entries in two years. In the current year the number of new entries to date has dropped to 170 being less by 40 than the number who had entered at the corresponding date a year ago. This falling off, however, is more than accounted for by the new rule before referred to, requiring every student who is not a graduate of a college to pass the admission examination as a condition of entering the School.

The number of College graduates who entered the School in the year under review was 128, being less by 4 than in 1891–92; but the number who entered in the latter year (132) was greater by 25 than in any previous year. The number who have entered in the current year to date is 138, being 16 more than had entered at the corresponding date a year ago, 9 more than at the corresponding date two years ago, and 37 more than at the corresponding date in any previous year.

The number of Harvard graduates who entered the School in the year under review was 58, being less by 1 than in 1891–92, less by 7 than in 1890–91, and less by 8 than in 1889–90. The number that has entered in the current year to date is 53, being less by 4 than at the corresponding date a year ago, less by 3 than at the corresponding date two years ago, less by 6 than at the corresponding date three years ago, and less by 8 than at the corresponding date four years ago.

The number of graduates of other colleges than Harvard who entered the School in the year under review was 70, being less by 3 than in 1891–92, but greater by 28 than in 1890–91, and just twice as many as in 1889–90; and a greater number entered in the latter year than in any previous year since 1870–71. The number who have entered in the current year to date is 85, being greater by 20 than at the corresponding date a year ago, greater by 12 than at the corresponding date two years ago, greater by 43 than at the corresponding date three years ago, and greater by 51 than at the corresponding date four years ago.

While, therefore, the number of Harvard graduates entering the School has been gradually diminishing during the last four years, having dropped from 66 in 1889–90 to 53 in the current year (to date), the number of graduates of other colleges entering the School has much more than doubled during the same period, the number having risen from 35 in 1889–90 to 85 in the current year (to date). The falling off in Harvard graduates is perhaps sufficiently explained by the fact (adverted to in my last annual report) that students of Harvard College have frequently, in recent years, entered the Law School before receiving their degree of Bachelor of Arts, either obtaining a special leave of absence from the Faculty of Arts and Sciences, or not being bound to remain longer in College. All such students belong of course in the category of non-graduates when they enter the School, and, as our classification of students into graduates and non-graduates has reference exclusively to the time when they enter the School, it follows that all such students will appear as non-graduates in all of our tables and computations subsequently made, notwithstanding they have in the meantime received their degree. One such student entered the School in 1890–91, 5 in 1891–92, 12 in 1892–93, and 9 in the current year. Moreover, the falling off in the number of such students in the current year, as compared with 1892–93, is due entirely to a change of practice on the part of the Faculty of Arts and Sciences. If leave of absence had been granted as freely in the current year as it was in 1892–93, the number of College students who would have entered the Law School in consequence of such leave of absence would have been greater in the current year than it was in 1892–93.

The number of non-graduates who entered the School in the year under review was 95, being an increase of 16 over the number who entered in 1891–92. The increase in the number of non-graduates was, therefore, greater by 4 than the total increase in the number of new entries, the graduates of colleges being less by 4 than in 1891–92. Doubtless the number of non-graduates was increased by the fact that it was the last year in which non-graduates could enter without passing an examination, or on passing an examination in Blackstone's Commentaries and one language only.

In the current year the number of non-graduates entering the School has dropped from 95 to 32; and, when it is remembered that only 20 passed the admission examination, the wonder is rather how the number can be so large as 32, especially when it is added that 8 of the 20 who passed the admission examination entered the School in previous years as special students, and passed the admission examination in order to become candidates for a degree. It may not be amiss, therefore, to say that, of the 32 non-graduates who have entered the School this year 12 passed the admission examination, 12 were excused from passing it in consequence of work done and examinations passed in Harvard College, 5 are old students who return to the School after an absence of a year or more, and who, therefore, were not effected by the new rule, and 3 were graduates of law schools, who, by a rule recently adopted, are entitled to enter the School without passing the admission examination.

If we take the annual catalogues as a standard by which to measure the size and growth of the School, and bear in mind that the period of rapid growth began in 1886–87, we find that the increase was 26 in 1886–87 (154 + 26 = 180), 35 in 1887–88 (180 + 35 = 215), 2 in 1888–89 (215 + 2 = 217), 37 in 1889–90 (217 + 37 = 254), 25 in 1890–91 (254 + 25 = 279), 84 in 1891–92 (279 + 84 = 363), and 31 in 1892–93 (363 + 31 = 394), while the decrease in the current year is 41 (394 — 41 = 353). This decrease, however, is more than accounted for by the operation of the new rule so often referred to; for the decrease in the number of non-graduates entering the School, caused by the operation of that rule, is 63 (95 — 32 = 63). It must not be forgotten that the rule in question has a two-fold operation, namely, first, in requiring all non-graduates to pass the admission examination; secondly, in requiring all who are examined for admission to pass an examination in two languages instead of one.

There is another rule, the operation of which has had a tendency to diminish the number of students in the School in the current year, as compared with 1892–93, namely, the rule requiring every student in the School to pass an examination in at least three subjects, at the end of each year, as a condition of remaining longer in the School.

This rule first came into operation, as to candidates for a degree, in the year 1892–93, and therefore it was not till the beginning of the current year that it had the effect of preventing candidates for a degree from remaining in the School. How much effect it had at the beginning of the current year is uncertain. At the close of the academic year 1892–93 there were in the School 28 candidates for a degree who failed to comply with the condition of passing an examination in three subjects either at the annual examinations in June or at the examinations for advanced standing in September; and all of these but 5 (who were exempted from the operation of the rule by a special vote of the Faculty) failed to return to the School; but to what extent they failed to return because of the rule in question, it is impossible to say.

The efforts which have been made within the last few years to have the course of study and instruction in Harvard College reduced from four years to three years, have thus far resulted in no benefit to the Law School. These efforts have not as yet commended themselves to a majority of the Faculty of Arts and Sciences, and hence they have not been successful, so far as regards their direct object. They have not, however, been without effect. On the contrary, they have been the cause of an important change in respect to the length of the College course, — a change which had for its object the shortening of the course, without materially diminishing the amount of work to be done, namely, by making the degree of Bachelor of Arts represent a certain amount of work done, without reference to the length of time occupied in doing it. Undoubtedly, the direct effect of this change is in favor of the Law School; for it enables a certain number of students to complete the College course in three years, and thus to enter the Law School a year sooner than they otherwise could. But it enables a much larger number to complete the course in less than four years without enabling them to complete it in three years; and in this indirect way it has a mischievous effect upon the Law School, which greatly overbalances its good effect; for, while the Law School undoubtedly has an interest in having the College course reduced to three years, it has a much greater interest in having that course terminate at the end of an academic year, and in having full work provided by the College for each student until his College course terminates. The reason is obvious; for students who fail to complete the college course in three years, and yet have only partial work for the fourth year, if they wish to enter the Law School will generally do so at the end of their third year in College, provided the Faculty of Arts and Sciences will grant them leave of absence; and if the Faculty of Arts and Sciences will not grant them leave of absence they will generally endeavor to accomplish the same object by attending the first year courses in the Law School, during their fourth year in College, with a view to gaining advanced standing in the Law School, and thus reducing their residence in the Law School to two years, instead of reducing their residence in College to three years. The consequences to the Law School are plain. If a student enters the Law School before he has finished his work in College, the Law School fails to get from him three full years of work. If, on the other hand, while remaining in College four years, he gains advanced standing in the Law School during his four years in College, the Law School not only fails to get from him three full years of work, but also loses a full year of residence and a full year's tuition-fee.

The extent to which College students are now entering the Law School before finishing their work in College, has already been stated. The extent to which they are seeking to obtain advanced standing in the Law School while in College, can be judged by the fact that, during the current year, 24 College students have applied for permission to take first year courses in the Law School, and that 21 of these are members of the present Senior class in College. 7 of these 21 are taking the entire first year work in the Law School; 2 others are taking all but what they had previously taken; and 15 are taking courses enough to admit them to advanced standing.

My report of a year ago contains the following passage in relation to the Library: —

"Since the date of my last report, it has been decided to increase the usefulness of the Library by providing it with another copy of every set of English and American reports which is used to any considerable extent. With a view to the speedy accomplishment of this object, the Librarian made a trip to England during the last summer vacation, and while there, he succeeded in purchasing, on very favorable terms, 1377 volumes of English reports, making, with extra sets of English reports already belonging to the Library, 1637 volumes. We have also availed ourselves, and are still availing ourselves, of every good opportunity to purchase another copy of every set of American reports of which another copy is at all needed, and our purchases of such reports already amount to 508 volumes. When this plan has been fully accomplished, the Library will have three copies of all the more important sets of English and American reports, and of several sets it will have four copies."

The policy thus indicated has since been diligently pursued; and as a consequence there have been added to the Library since the foregoing statement was made, 1686 volumes of American reports. Adding these to the number stated above, we have a total of 2194 volumes of American reports, added to the library pursuant to the plan stated in the preceeding paragraph.

The purchase of American reports by us is attended with two peculiar difficulties, — one relating to price, the other relating to condition. Some American reports have had a very large sale, while others have had a very small sale. The former have generally been re-printed, — some of them many times, — while the latter generally have never been re-printed. Moreover, reprints of American reports are almost invariably inferior to the original edition, and every successive re-print is generally worse than the one which preceded it. Therefore, as a rule, we decline to purchase re-prints of American reports on any terms whatever; and yet, in the case of reports which have been re-printed, it is frequently extremely difficult to find a complete set of the original edition; and even when a complete set is found, we seldom think it safe to purchase it until it has first been seen by us and every volume of it examined.

In the case of American reports which have never been re-printed (not including of course reports of very recent date), as the market for them is narrow, so the supply of copies is limited; and hence booksellers find it for their interest to hold them at very high prices. When, therefore, as is generally the fact, such reports are to be had only at second hand, the purchase of them is attended with difficulty in respect both to price and condition.

Thus far we have been successful beyond our expectations; for, while the large number of volumes of American reports stated above have been recently added to the Library, we have never purchased a set which was not in a very satisfactory condition, nor for other than a very moderate price.

C. C. LANGDELL, *Dean.*

DECEMBER, 1893.

THE MEDICAL SCHOOL.

To the President of the University:

Sir, — As Dean of the Medical Faculty I have the honor to submit the following report upon the Medical School for the academic year 1892–93: —

The new four year's course of instruction went into effect at the beginning of the last year. The change was not marked by a diminution in the size of the entering class as had been anticipated, but the expected falling off, though delayed, has occurred at last, the new matriculants in the present year being 25 less in number than those of a year ago. Owing, however, to the large size of the higher classes the total number of students in the School will not be diminished.

In the last report attention was called to the recent diminution of the percentage of college graduates in the entering classes of the School, and an attempt was made to discuss some of the causes which have led to this result. Whatever these causes may be they are evidently still operative, for the percentage, having, between 1884 and 1892, fallen from 53.9 to 28.2, has in the present year dropped to 23.0. This steady diminution in the relative number of the most desirable class of our students is a subject which demands the serious attention of the University authorities.

As interesting events in the history of the School during the past year may be mentioned:

1st. — The establishment of a laboratory of experimental therapeutics for carrying on original investigations and for training advanced students in pharmacological research.

2d. — The delivery of a course of evening lectures on special therapeutic subjects by Professor H. C. Wood, of Philadelphia, at the invitation of the Harvard Medical School Association. The course was numerously attended by both students and practitioners, and it is hoped that similar courses will in the future form an attractive feature in the curriculum of the School.

3d. — The participation by the School in the University Exhibit at the World's Columbian Exposition in Chicago. In this exhibit an attempt was made, in the first place, to present by means of photographs and charts a picture of the facilities for instruction which are at the disposal of the school and a comprehensive view of the growth of its various departments; secondly, to give to the exhibit a personal and historical character by the display of busts of distinguished physicians who have been connected with the School and of instruments marking the steps in the progress of important inventions, and, thirdly, to show certain pieces of apparatus and methods of work which are in actual use for purposes of teaching and research and which may be regarded as characteristic of the laboratories in which they originated.

The special work done in the Medical School, in addition to the regular instruction as set forth in the appended tables, may be summarized as follows: —

Anatomy. — The collection of large paper pulp models of bones has been increased by the addition of a very large model representing a median section of a skull.

Histology and Embryology. — A second edition of Professor Minot's treatise on Human Embryology has been prepared by the author and translated into German by Dr. Sandor Kaessner.

Professor Minot has also published an article on "The Structural Plan of the Human Brain" in the Popular Science Monthly, and a classified "Bibliography of Vertebrate Embryology" containing over 3500 titles, in the memoirs of the Boston Society of Natural History.

Physiology. — Under the direction of Dr. W. H. Howell, Associate Professor of Physiology (who has, to our great loss, accepted the Chair of Physiology in the newly organized Medical School of the Johns Hopkins University) the following investigations were carried on:

1. — By Mr. R. G. Eaton, on the relation of calcium salts to physiological irritability.

2. — By Mr. A. T. Mann, on the relation of calcium salts to the formation of fibrin.

3. — By Mr. Edwin Leonard, on the effect of changes of temperature on the conductivity of nerve fibres.

4. — By. Mr. J. N. Coolidge, as holder of the John Ware Fellowship, on the degeneration and regeneration of vaso motor and sweat nerve fibres.

A study of the phenomena connected with the production of a bilateral tendon reflex was also made by Messrs. Metcalf and Page, and the effect of fatigue on the rate of transmission of nerve impulses was studied by Mr. G. C. Dolliver as holder of the George C. Shattuck Fellowship.

Chemistry. — Professor E. S. Wood has continued his studies on the restoration of the blood corpuscles in dried blood stains. The results will appear in an article on "Blood and Other Stains" in Vol. II. of a new medico-legal work now in publication by Wm. Wood & Co.

The study of uraemia in co-operation with Professor F. C. Shattuck has been continued.

Pathology. — Professor Councilman has published the results of original investigations on Gonorrhoeal Myocarditis, on Diptheria, and on Sudden Death in Heart Disease.

Dr. Whitney has been engaged in studying new methods of preparing cover slips for staining blood and bacteria and in investigating the subject of extra uterine pregnacy.

Dr. Mallory has pursued investigation into the nature of Hyaline and is now, as holder of the George C. Shattuck and the Charles E. Ware fellowships, continuing these investigations in Prague.

Dr. Prescott has been engaged in the study of primary tumors of the liver. Papers on all these subjects will shortly appear.

There will be a number of articles in the forthcoming report from the City Hospital consisting principally of reports of cases from autopsies at that institution.

Bacteriology. — Professor Ernst has isolated and described a new bacillus (B. Pyocyaneus Pericarditidis) an account of which will be found in the transactions of the Association of American Physicians.

Dr. Stone has spent much time in preparing material for illustrating Dr. Warren's work on Surgical Pathology.

Drs. Burr and McCollom have been engaged upon inoculation experiments with actinomycosis.

Dr. McCollom has also done much work upon the methods of differential diagnosis of the Bacillus of Typhoid Fever and of the Spirillum of Asiatic Cholera.

Museum. — Many important additions have been made to the Museum during the past year, especially in the osteological series by Professor Dwight.

The Museum was open five times weekly during the second half-year in order to afford a better opportunity for the students to study the specimens. This was improved by a small percentage of the classes.

The whole number of students in attendance

During the year was	475
During the first term	442
During the second term	454

Of these 220 had literary or scientific degrees.

There were 83 applicants for the degree of Doctor of Medicine in the three-years' course, of whom 17 were rejected.

There were 19 applicants for the degree of Doctor of Medicine in the four-years' course, of whom one was rejected; 8 of these students received the degree *cum laude*, and 6 received the degree of Master of Arts together with that of Doctor of Medicine.

The fourth class was composed of 24 students.

The scholarships were awarded as follows: —

1st Barringer Scholarship,	T. H. Carter . .	3d Class.
2d " "	E. H. Kidder . .	4th "
Faculty "	H. D. Jenks . . .	3d "
" "	H. F. Hewes . .	2d "
" "	C. L. Mix	2d "
" "	F. S. Smith . . .	2d "
Cheever "	J. C. Hubbard . .	1st "
Sweetser "	M. C. Bamji . . .	1st "
Foster Gratuity	A. B. Duel . . .	3d "
" "	M. D. Brown . .	2d "

The Faculty awarded one gratuity to

A. C. Fales . . . . 1st Class.

The usual statistics of the School will be found in the appended tables.

H. P. BOWDITCH, *Dean.*

COURSES OF INSTRUCTION, 1892–93.

FIRST CLASS.

Descriptive Anatomy. — Professor Dwight. Three exercises per week. 128 students.

Practical and Applied Anatomy. — Asst. Professor M. H. Richardson. Three exercises per week, November till May.

Practical Anatomy, Recitations, and Exercises in Dissection. — Drs. Mixter, Conant, Munro, and Bryant. Six exercises per week, November till May.

Laboratory Exercises in Histology. — Professor C. S. Minot, and Drs. Quincy Greene, and Ames. Two exercises per week, 1st half-year; three, 2d half-year.

Histology. — Professor C. S. Minot. Two lectures a week, 1st half-year. 132 students.

Embryology. — Professor C. S. Minot. One lecture a week, 2nd half-year.

Systematic and Experimental Physiology. — Professors Bowditch and Howell. Five exercises per week, 1st half-year; six, 2d half-year. 125 students.

Laboratory Exercises in Experimental Physiology. — Dr. Cardwell. November till May.

Medical Chemistry. — Professor Hills. Two exercises per week, 2d half-year.

Practical Exercises in the Laboratory for Medical Chemistry. — Professor Hills, and Drs. Wentworth and Worcester. 2d half-year.

General and Analytical Chemistry. — Professor Hills. Two exercises per week, 1st half-year. 122 students.

Practical Exercises in the Laboratory for General Chemistry. — Professor HILLS, and Drs. HARRINGTON and WORCESTER.

Hygiene. — Dr. HARRINGTON. Eighteen lectures and demonstrations.

Bacteriology. — Asst. Professor ERNST. One exercise per week, 2d half-year. 128 students.

Practical Work in the Bacteriological Laboratory. — Asst. Professor ERNST, and Drs. JACKSON, STONE, and BURR. One exercise per week. 2d half-year.

SECOND CLASS.

Topographical and Advanced Anatomy. — Professor DWIGHT. One exercise per week. 126 students.

Practical and Applied Anatomy. — Asst. Professor M. H. RICHARDSON. Three exercises per week, November till May.

Practical Anatomy, with Exercises in Dissection. — Drs. MIXTER, CONANT, MUNRO, and BRYANT. Five exercises per week, till May.

Medical and Toxicological Chemistry. — Professor WOOD. Two exercises per week, 1st half-year. 133 students.

Practical Exercises in Laboratory for Medical Chemistry. — Professor WOOD and Dr. WENTWORTH. Five exercises per week.

General Pathology and Pathological Anatomy. — Professor COUNCILMAN. Two exercises per week. 123 students.

Special Pathological Anatomy, with Demonstrations. — Professor COUNCILMAN. Two exercises per week.

Laboratory Exercises in Pathological Histology. — Professor COUNCILMAN, and Drs. WHITNEY, PRESCOTT, and MALLORY. Two exercises per week.

Practical Instruction in Performing Autopsies. — Professor COUNCILMAN, and Dr. MALLORY. Throughout the year.

Clinical Medicine, including one weekly conference. — Professors SHATTUCK and MASON, and Dr. VICKERY. Seven exercises per week.

Practical Instruction in Auscultation and Percussion. — Drs. GANNETT, V. Y. BOWDITCH, WITHINGTON, and KNIGHT. In sections during 1st half-year.

Recitations in Theory and Practice. — Dr. CUTLER. Two exercises per week.

Laryngoscopy. — Drs. DE BLOIS and FARLOW. In sections during 1st half-year.

The Application of Bandages and Apparatus. — Drs. BURRELL and SCUDDER. Six exercises per week, October till January.

Clinical Surgery. — Professor WARREN. Two exercises per week.

Clinical Surgery. — Professor PORTER. Three exercises per week.

Clinical Surgery. Practical Exercises. — Drs. ELLIOT, HARRINGTON, MONKS, BURRELL, and WATSON. Throughout the year.

Therapeutics. — Dr. HARRINGTON. Two exercises per week. 125 students.

Paediatrics. — Asst. Professor ROTCH. Two exercises per week for two months.

THIRD CLASS.

Theory and Practice of Obstetrics. — Professor W. L. RICHARDSON. Two exercises per week. 103 students.

Recitations in the Theory and Practice of Obstetrics. — Dr. C. M. GREEN. One exercise per week.

Operative Obstetrics. — Dr. C. M. Green. Twelve practical exercises.

Practical Instruction in Clinical Obstetrics. — Drs. C. M. Green, Reynolds, and Townsend. Throughout the year.

Obstetrical Conference. — Professor W. L. Richardson, and Drs. C. M. Green, Reynolds, and Townsend. One exercise per week after December.

Theory and Practice of Physic. — Professor Fitz. Two exercises per week, 103 students.

Clinical Lectures in Theory and Practice. — Professor Fitz. Two exercises per week.

Clinical Medicine, including one weekly conference. — Professors Shattuck and Mason, and Dr. Vickery. Seven exercises per week. 99 students.

Surgery and Surgical Pathology. — Professor Warren. Two exercises per week. 101 students.

Clinical Surgery. — Professor Cheever, and Drs. Gay, Bolles, Bradford, Post, and Gavin. Three exercises per week.

Clinical Surgery. — Professors Porter and Warren, Asst. Professor M. H. Richardson, and Drs. Beach, Homans, and Cabot. One exercise per week.

Clinical Surgery (conference). — Professor Porter. One exercise per week. 98 students.

Surgical Anatomy and Operative Surgery. — Professor Porter. Two exercises per week in March and April.

Operative Surgery. — Professor Porter, Asst. Professor M. H. Richardson, and Drs. Mixter, Conant, Munro, Monks, Elliot, Harrington, Burrell, Watson, and Scudder. Fifteen practical exercises.

Surgical Landmarks. — Dr. Monks. Ten Exercises.

Diseases of the Eye. — Professor Wadsworth and Dr. Standish. Four exercises per week. 1st half-year.

Diseases of the Skin. — Professor White. One exercise per week.

Clinical Dermatology. — Professor White. One exercise per week.

Gynaecology. — Professor Baker. One exercise per week. 60 students.

Clinical Gynaecology. — Professor Baker and Dr. Strong. Two exercises per week, 2d half-year.

Clinical Gynaecology. — Dr. Davenport. Two exercises per week, 1st half-year.

Practical Diagnosis and Treatment of Syphilis. — Dr. Post. One exercise per week till February.

Practical Diagnosis and Treatment of Diseases of the Ear. — Professors Blake and J. O. Green. One exercise per week, January till April.

Anatomy, Physiology, and Diseases of the Ear. — Professor Blake. Two exercises per week for three months.

Practical Diagnosis and Treatment of Diseases of Children. — Asst. Professor Rotch. Two exercises per week. 29 students.

Practical Diagnosis and Treatment of Diseases of the Nervous System. — Dr. Putnam. One exercise per week.

Mental Diseases. — Dr. FISHER. Two exercises per week, 2d half-year.

Legal Medicine, with Demonstrations. — Asst. Professor DRAPER. Two exercises per week, 1st half-year.

FOURTH CLASS.

Clinical Medicine. — Dr. GANNETT. One exercise per week for seven months.

Clinical Medicine. — Dr. VICKERY. One exercise per week for three months.

Clinical Surgery. — Dr. GAY. Two exercises per week for two months.

Clinical Surgery. — Dr. BURRELL. Two exercises per week for three months.

Operative Surgery. — Professor PORTER, Asst. Professor M. H. RICHARDSON, and Drs. MIXTER and MONKS. Practical Exercises. 4 students.

Orthopedic Surgery. — Dr. BRADFORD. Two exercises per week for two months.

Clinical Obstetrics. — Professor W. L. RICHARDSON and Dr. C. M. GREEN. Two exercises per week for five months. 8 students.

Operative Obstetrics. — Professor W. L. RICHARDSON and Dr. C. M. GREEN. Practical exercises. 6 students.

Ophthalmoscopy. — Professor WADSWORTH. Two exercises per week. 6 students.

Dermatology. — Professor WHITE. Two exercises per week. 4 students.

Clinical Gynaecology. — Professor BAKER and Drs. DAVENPORT, STRONG, and SWIFT. Two exercises per week. 24 students.

Operative Gynaecology. — Professor BAKER and Drs. DAVENPORT, STRONG, and SWIFT. Ten exercises.

Diseases of Children. — Asst. Professor ROTCH. Two exercises per week for three months. 14 students.

Diseases of the Nervous System. — Drs. WALTON and KNAPP. Two exercises per week for four months.

Mental Diseases. — Dr. FISHER. Two exercises per week for four months.

Mental Diseases. — Dr. COWLES. One exercise per week for three months.

Laryngology. — Dr. COOLIDGE. Three exercises per week for three months. 2 students.

Otology. — Professors BLAKE and J. O. GREEN. Three exercises per week for eight months. 3 students.

Legal Medicine. — Asst. Professor DRAPER. Two exercises per week, 1st half-year. 6 students.

Syphilis. — Dr. GREENOUGH. Two lectures a week for four months.

Ovarian Tumors. — Dr. HOMANS. Six lectures; clinical exercises.

Hygiene. — Dr. DURGIN. Sixteen lectures. 5 students.

Genito-urinary Surgery. — Drs. CABOT and WATSON. One exercise per week for seven months.

Bacteriology. — Dr. ERNST. One exercise per week for four months. 10 students.

Cookery. — BOSTON COOKING SCHOOL. Two exercises per week for one month.

TABLE I.—JUNE EXAMINATIONS.

		First Class										and				Second Class.							
		Histology.		Bacteri-ology.		Medical Chemistry.		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Adv. Anatomy.		Therapeutics.	
			%		%		%		%		%		%		%		%		%		%		%
1889	Passed							67		65		55		59		61		58		53		61	
	Rejected							6	8	13	16	9	14	9	13	17	21	5	8	8	13	18	23
	Total							73		78		64		68		78		63		61		79	
1890	Passed							49		68		51		58		65		82		46		77	
	Rejected							28	36	9	11	11	17	7	10	12	15	13	13	26	36	11	12
	Total							77		77		62		65		77		95		72		88	
1891	Passed							94		87		76		66		86		56		51		65	
	Rejected							31	24	28	24	22	22	15	18	33	27	7	11	19	27	10	13
	Total							125		115		98		81		119		63		70		75	
1892	Passed							107		102		79		108		14		95		116		78	
	Rejected							39	21	38	27	31	28	18	14	1	7	12	11	3	3	23	23
	Total							136		140		110		126		15		107		119		101	
1893	Passed	76		111		88		76		91				133		4		116		114		78	
	Rejected	15	16	17	13	32	26	55	42	35	27			23	14	0	0	24	17	11	9	47	37
	Total	91		128		120		131		126				156		4		140		125		125	

TABLE I. — JUNE EXAMINATIONS, CONTINUED.

THIRD CLASS. — ELECTIVES.

		Theory and Practice.		Clinical Medicine.		Surgery.		Clinical Surgery.		Thera-peutics.		Obstetrics.		Diseases of Children.		Derma-tology.		Gynae-cology.		Nervous Diseases.		Legal Medicine.		Mental Disease.		Ophthal-mology.		Otology.	
			%		%		%		%		%		%		%		%		%		%		%		%		%		%
1889	Passed	59		61		61		62		53		58																	
	Rejected	12	18	6	9	6	9	4	6	11	17	12	17																
	Total	71		67		67		66		64		70																	
1890	Passed	77		77		75		72				73		69				3		1		1				5		2	
	Rejected	7	8	7	8	5	6	0	0			11	13	3	4			0	0	0	0	0	0			1	16	0	0
	Total	84		84		80		72				84		72				3		1		1				6		2	
1891	Passed	73		70		75		62				72		60		1		8								2		1	
	Rejected	7	8	5	6	6	7	1	1			10	12	9	13	0	0	0	0							0	0	0	0
	Total	80		75		81		63				82		69		1		8								2		1	
1892	Passed	72		65		64		74				64		20		2		39		1									
	Rejected	2	3	4	6	3	4	0	0			5	7	3	13	0	0	0	0	0	0								
	Total	74		69		67		74				69		23		2		39		1									
1893	Passed	95		93		96		90				101		30		7		58								3		5	
	Rejected	1	1	12	11	3	3	5	5			2	2	0	0	0	0	1	17							0	0	0	0
	Total	96		105		99		95				103		30		7		59								3		5	

TABLE I. — JUNE EXAMINATIONS, CONTINUED.

		Fourth Class.																											
		Ophthalmology.		Dermatology.		Gynaecology.		Clinical Obstetrics.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Legal Medicine.		Otology.		Laryngology.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Hygiene.	
			%		%		%		%		%		%		%		%		%		%		%		%		%		%
1889	Passed	3		6		8		4		9		1		0		2		0		3		9		1					
	Rejected	0	0	0	0	0	0	2	33	0	0	0		0	0	0	9	0	0	0	0	0	0	0	0				
	Total	3		6		8		6		9		1		0		2		0		3		9		1					
1890	Passed	3		5		13		12		15				1		1		1		1		16		6		1		1	
	Rejected	2	60	0	0	0	0	0	0	2	11		0	0	0	0	0	0	0	0	0	1	6	2	25	0	0	0	0
	Total	5		5		13		12		17				1		1		1		1		17		8		1		1	
1891	Passed	11		7		13		7		19		1		1		4		2		1		15		5		2		1	
	Rejected	0	0	0	0	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	11		7		13		8		19		1		1		4		2		1		15		5		2		1	
1892	Passed	4		13		21		17		33						9		3		2		17		6		1		5	
	Rejected	3	43	0	0	2	9	0	0	0	0		0			0	0	0	0	0	0	4	19	2	25	0	0	0	0
	Total	7		13		23		17		33						9		3		2		21		8		1		5	
1893	Passed	5		4		15		7		14		6				6		3		1		6		4		10			
	Rejected	1	16	0	0	0	0	1	12	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		
	Total	6		4		15		8		14		6				6		3		1		6		4		10			

TABLE II. — SHOWING NUMBER OF TERMS SPENT AT THE SCHOOL BY GRADUATES.

	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Spent six terms .	57 96%	63 89%	72 91%	83 85%	77 88%	51 93%	58 88%	62 94%	90 97%	78 96%
Spent five terms .	0	3 4%	3 4%	4 4%	4 4%	2 3%	2 3%	1 1½%	1 1%	0
Spent four terms .	2 3%	4 5%	4 5%	1 1%	3 3%	2 3%	6 9%	1 1½%	1 1%	2
Spent three terms .	0	0	0	0	0	0	0	0	0	1
Spent two terms .	0	1 1%	0	1 1%	3 3%	1 1%	0	2 3%	1 1%	0
Total graduated .	59[1]	73[2]	79[3]	98[4]	87[5]	56[6]	66[7]	66[8]	93[9]	81[10]

[1] Includes nine students of the fourth class.
[2] Includes three students of the fourth class.
[3] Includes nine students of the fourth class.
[4] Includes eleven students of the fourth class.
[5] Includes eleven students of the fourth class.
[6] Includes seven students of the fourth class.
[7] Includes thirteen students of the fourth class.
[8] Includes seventeen students of the fourth class.
[9] Includes twenty-six students of the fourth class.
[10] Includes twenty-three students of the fourth class.

TABLE III. — STATISTICS OF EXAMINATIONS.

EXAMINATIONS FOR ADMISSION.

			Physics.	Latin.	English.	Elective.	Gen. Chem.	Qual. Analysis.	Rejected.
1893.	June	Offered . .	61	53	63	61	47	47	5
		Conditioned	21	4	0	1	11	30	
	Sept.	Offered . .	34	30	36	34	21	23	3
		Conditioned	16	6	0	3	9	16	

TABLE IV.

	Summer Courses.					Graduate Courses.				
	1889.	1890.	1891.	1892.	1893.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Courses taken .	54	60	77	84	111	27	64	145	52	103
Students	33	45	65	67	81	22	82	43	33	52
Receipts	$1250	$1425	$1817	$1865	$2650	$617	$1295	$2137	$1240	$2083

THE DENTAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR, — As Dean of the Dental Faculty I beg to submit the following report upon the Dental Department for the year 1892–93: —

The number of students matriculating was fifty-three, divided as follows: first year, twenty-one; second year, thirteen; third year, nineteen. Three first-year students left the School for various reasons during their second term. At the Commencement in June fourteen were graduated and three failed to pass the final examinations.

The subjects of instruction have been the same as in former years, with little change.

In the first year the students have attended the Medical School, joining the class of that year and taking the Medical School courses in Anatomy, with dissections, Physiology, with laboratory instruction, and Chemistry, also with abundant laboratory practice, under their respective instructors. At the end of the year they have taken with the Medical class the regular examinations. In the Dental School instructors of the Medical School have given instruction to students of the second and third years — Dr. Monks in Surgical Pathology, Dr. Worcester in Chemistry applied to Dentistry, and Dr. Walton on Neurology in its application to the Trifacial Nerve. Lectures are given on their respective subjects by the professors and instructors of the Dental School, occupying for each student one hour a day throughout the year. These subjects are Operative Dentistry, Mechanical Dentistry, Dental Pathology, Orthodontia, Materia Medica and Therapeutics, Oral Anatomy and Physiology, Bacteriology, and Crown and Bridge Work. The time not given to lectures is devoted to practical instruction in Operative and Mechanical Dentistry, Orthodontia, and Crown and Bridge Work. As Dentistry is mainly a business requiring manipulative skill, manual practice necessarily occupies by far the largest portion of the time of the students. We have a large and interested body of instructors and demonstrators who assist the professors in this most arduous part of their duties. The work in the Operative and Mechanical Infirmaries is done entirely by the students under the supervision of the instructors. A supply of patients is never lacking, and many forms of dental and oral disease are presented to and treated by the students, such as are seldom met with in private practice. Cases of cleft palate are not infrequent, and are operated upon by the professor by means of the surgical method of staphyloraphy, or by the students under instruction of the demonstrator, Dr. Moriarty, by means of artificial vela. The range of work performed in our Infirmaries is little understood even by the most intelligent. Extraction of teeth for the relief of tooth-ache is supposed to be our principal business. It is true that much of this is necessarily done for relief of pain caused by neglect among the ignorant and careless poor. But the more thoughtful can have their teeth cared for, irregular and deformed dentures straightened and made sightly, artificial teeth inserted on plates or on the natural roots, fractured jaws set and made useful, and artificial palates inserted which give the power of intelligible speech to many that have never possessed it, or restore it to those who by some accident to the mouth have been deprived of it. Surgeons are beginning to recognize these as specialties of dentistry, and patients are being sent to us with increasing frequency by physicians and even from hospitals. Drs. D. M. Clapp and W. H. Potter have given clinical instruction of a very valuable kind, and have accepted appointments for another year. All the clinical instructors of both departments have accepted service for another year, except Dr. Banfield, who after a service of several years has declined a renomination on account of his health. Dr. F. S. Hopkins, of the class of 1888, was appointed to the vacancy.

The number of students is steadily increasing, and crowding our already over-crowded rooms. The Operative department has found space by taking possession of an unoccupied room on the same floor. This is, however, little suited to the use to which it is put, and to fit it properly to our wants will require a great outlay of money, of which we have none to spare. Such relief is not within reach of the Mechanical department. We have no room, good or bad, to expand into. The room we have is already filled to repletion. After due consideration it was resolved to make a mighty effort to raise money for a new building. Committees were appointed by the Faculty and the Association of the Alumni. A public meeting was held on the 30th of November, 1892, which was addressed by several well-known and approved speakers, including the late Bishop Brooks, who here delivered his last secular address and for a cause in which he was sincerely interested. An executive committee, composed of well-known business men of this community, was nominated by our President, and the enterprise was launched. Unfortunately, the year of 1892–93 proved especially hard for such an enterprise as ours. The death of the beloved Bishop Brooks gave the first blow, the Cuttyhunk disaster came next, the storms and tempests at the South and West followed, and finally came the business depression. All these reduced the powers even of the most willing and best disposed, and the undertaking is now at a standstill. It is not abandoned, however. We are but waiting for better times, when we shall start again, under fairer auspices we hope.

Dr. W. P. Cooke accepted the appointment of Instructor in Crown and Bridge Work for another year. His work in this department has been exceptionally good. He has succeeded in imparting his own interest to the students and awaking them from the sluggish perfunctoriness that is apt to accompany student-work out of the beaten track. Drs. Paul and Moriarty, demonstrators of the two main departments, have performed their duties in a most interested and faithful manner, and have accepted appointments for another year.

Professor Brackett has given 35 lectures in Dental Pathology — following the same general course as in former years, introducing and getting variety from such new matter as passing time has developed.

Dr. Fillebrown has given 33 lectures.

Dr. Smith lectured or gave clinics every Thursday during the term, 35 in number, and reports that the students under his direction have treated 59 cases of irregularities during the year — many of them so pronounced as to produce positive deformities; they have succeeded not only in producing an attractive and wholesome appearance where there was actual repulsiveness, but have given greater power of proper mastication, and added resonance and distinctness to the voice.

Dr. Stanton gave 30 lectures, 28 in Oral Anatomy and 2 in Bacteriology. In Oral Anatomy the subjects taken up were: Formation of the skin; the formation of teeth from skin; simple and complex forms of same; descriptions of temporary and permanent sets; superior and inferior maxillae; their articulations; antrum of Highmore; dentine, enamel, and cementum; histology of the same; pulp, its formation and what it forms; development of the teeth; embryology of the same; cell elements; calcification; development of the jaws; eruption and attachment of the teeth; irregularities; supernumerary teeth.

Dr. Briggs gave 30 lectures on Materia Medica and Therapeutics, especially with reference to the Oral Cavity, introducing and explaining such new remedies as seemed appropriate.

Dr. Chandler gave 28 lectures on Mechanical Dentistry.

Dr. Fillebrown gave 33 lectures on Operative Dentistry.

Dr. Monks gave 10 lectures on Surgical Pathology.

Dr. Worcester gave 10 lectures on Dental Chemistry.

Dr. Walton gave 4 lectures on Neurology.

Dr. Cooke gave 6 lectures on Crown and Bridge work.

Dr. Boardman, the faithful and interested Curator of our Dental Museum, writes as follows: — "Since my last report the Dental Museum has played its part in the University Exhibit at the World's Columbian Exposition. From its treasures there were contributed two cabinets containing nearly a thousand specimens, mostly pathological, divided into 18 different and distinct subjects, the most interesting. This exhibit proved unique. There was nothing of a similar nature, and it proved of unusual interest to the general public as well as to dentists and physicians. The contributions continue to increase, largely from the younger graduates. Many also who are unconnected with the School, and even non-graduates contribute specimens.

The past year about 100 new specimens, mostly pathological, have been received. Among them are 24 skulls of native Hawaiians which, by vote of the Dental Faculty, were obtained from Dr. J. M. Whitney, of Honolulu, S. I. These skulls, supposed to be at least 1500 years old, were secured by him from the lava caves on one of the islands, and brought to the World's Fair. This valuable collection represents nearly every known form of dental disease. These are labelled with such information as is possible to put in a small space. When, if ever, our catalogue is printed, the story can be given more at length."

Dr. J. R. White having declined a renomination as Instructor in Mechanical Dentistry, Dr. Fred. H. Woodcock, of the class of '91, has been appointed to the place.

At the meeting in June it was voted by the Faculty to establish a small ward for such surgical patients as need to remain for a limited time, their condition making immediate removal undesirable. Accordingly a room containing two beds has been provided. These beds have already been used by patients with marked benefit. The provision promises to be of much value in the future.

It was decided by the Faculty to make at the World's Fair an exhibit of the facilities of the School for instruction, and of such specimens as were in quality, variety, number, or arrangement likely to prove unique. Photographs, interior and exterior, of the building were prepared and placed with the exhibit. Also charts to show the growth of the School in students, native and foreign, and the increase in the number of instructors, and in the number of courses. A collection of pathological preparations showing formations of secondary dentine, prepared and presented to the School by Dr. Wm. P. Cooke, and believed to be the most perfect of its kind in existence, as well as several historical specimens from the laboratory of the late Dr. N. C. Keep, our first professor of Mechanical Dentistry and Dean, were included in the exhibit. Dr. Boardman, our efficient Curator, has told the rest of the story above.

The fund subscribed for our new building now amounts to $18,000 — and $20,000 more is urgently needed at once, that the purchase of a very desirable lot at no great distance from the Medical School building may be consummated.

THOMAS H. CHANDLER, *Dean*.

THE BUSSEY INSTITUTION.

To the President of the University:

Sir, — I respectfully submit the following report upon the Bussey Institution for the year 1892–93: —

Regular, stated courses of instruction in Agriculture, Horticulture, Botany, and Agricultural Chemistry were given, as usual, by Messrs. Motley, Watson, Kidder, and Storer; and the Superintendent of the Farm, Mr. Hersey, met the students regularly twice a week for familiar talks about the tools, implements, and processes of New England agriculture.

Six students were connected with the School, and the degree of Bachelor of Agricultural Science was conferred upon one of them at Commencement.

One paper, entitled *Facts Gathered by Observation and Experience Relating to the White Pine*, by Mr. Hersey, was printed for insertion, in the next number of the Bussey Bulletin.

As has mentioned in previous reports, the School of the Bussey Institution suffers constantly through the action of the United States Government and of the governments of the several states in fostering and in advertising the numerous experiment stations and so-called land-grant colleges which are scattered throughout the land.

I have to acknowledge the gift of a hay-wagon to the Bussey Farm, from Mr. Patrick McMorrow, of Jamaica Plain; and of several sets of Agricultural and Horticultural Journals, presented to the Library by Mr. B. M. Watson, Jr., and by Dr. C. A. Cheever, B.A.S., of Mattapan.

F. H. STORER, *Dean*.

THE VETERINARY SCHOOL.

To the President of the University: —

Sir, — I beg to submit herewith the eleventh annual report of the School of Veterinary Medicine.

Of the three members of the third class all presented themselves for the final examinations, and all were successful. There were five graduates; three from the third class and two others who, for various reasons, had not previously qualified.

There are now fifty students in the School, divided as follows: Seven in the third class, eleven in the second, twenty-three in the first and nine in the special. There were twenty-five applicants for the admission examinations, eighteen of whom were successful. Thus there are ten more students in the School than last year, and nineteen more than in the year before that; which shows that the encouraging growth of the last few years is being fully maintained.

George B. Foss, D.M.V., has been added to the teaching staff, and gives a new course on the Diseases of Dogs. The Veterinary students have been withdrawn from the course in Therapeutics at the Medical School, for which an enlarged course in Veterinary Therapeutics, by Professor Winslow, has been substituted.

Of the new courses recommended in my report of last year those in Comparative Pathology and Meat Inspection have been established. A new course on Diseases of Dogs has also been instituted.

These additions have been made possible, first, by the willingness of Professor Whitney to add to his labors without recompense; secondly, by the kindness of the Board of Health of the City of Boston in allowing our students access to the Abattoir in Brighton, and by the willingness of their inspector, Dr. Burr, to give the necessary instruction for a small fee; and thirdly, by the offer of Dr. Foss to add the work of the course on dogs to his present duties in the Hospital without additional pay.

Nothing need be added to what was said last year regarding the desirability of the newly instituted instruction in Comparative Pathology and Meat Inspection. The great and rapidly increasing importance of a knowledge of these subjects by veterinarians is now appreciated; and it is understood that they are of importance in connection with the public health.

The new instruction in Diseases of the Dog embraces a full discussion of the various breeds of the animal, of his habits, of his treatment in health, and of the treatment of the disorders to which he is subject. This course has not been established before, because of the extreme difficulty of finding a competent person to give it — one who has had the training needed, and who continues, from love of the animal, to give a large share of his time and thought to practice on dogs. The course now established should not be allowed to cease because the School cannot pay even a nominal salary to the instructor. Here is an opportunity for some lover of the dog.

The town of Brookline has recently appointed Professor Osgood inspector of milk and of food producing animals, with his office at the Village St. establishment, and has fitted up a laboratory here with all the appliances for making the required milk analyses. This is an exceedingly valuable addition to the teaching resources of the School; as it gives our students abundant opportunities for becoming practically familiar with a subject which naturally falls within the domain of the practitioner of comparative medicine.

The work of the department had grown to such an extent that it was found, about the middle of the year, to be necessary to get more room; and the lower story of an adjoining house was hired and altered to suit the demand. This makes an addition of $200 a year to our rent account, adds another piece to the patchwork which goes to make up the home of the Veterinary School, and gives us another landlord.

The School is now in pressing need of a Pathological and Bacteriological laboratory; to be carried on under the immediate direction of Professor Whitney who must have a young pathologist to help him in the work. Room for the work can probably be leased in the building of which we have already hired a portion, and the necessary apparatus can easily be obtained if a small sum of money is put at the disposition of the School for the purpose. The expense of this laboratory would be: for instruments and apparatus, $500; salaries and rent, $700 per year. This is not a large sum, but it is more than the School itself can afford so long as its only resources are its own earnings and those of the Hospital. I most earnestly hope that this statement of a pressing need will meet with a response from some quarter.

Finances. — The itemized account in the Statement of the Treasurer of the University shows that of the gross receipts of the Veterinary Department the School has earned $4379.52, as against $3431.00 for the previous year — a gain of $948.52. While it is impossible to say exactly what the running expenses of the School are for a year, a careful estimate shows them to be about $8000. If this estimate is nearly correct the School has made a deficit of $3620.48 for the year, which has been made up, as usual, by the surplus earnings of the Hospital. The increased expense of maintaining the School now, as against the cost in 1890–91, when an estimate of $5000 was given you, has been chiefly caused by adding new courses of instruction to the curriculum, by increasing some of the salaries, and by raising the amount paid to the Medical School for instruction given there to our students. The gross annual income of the Department during the same period has been increased by $3677.81, of which $1952.52 has come from the School.

The following table is interesting as showing the income from the School during the past five years, as well as the gradual increase in the number of students: —

Year.	Number of students at time of report.	Gross Income.
1888–89	20	$2352.19
1889–90	23	2395.00
1890–91	31	2427.00
1891–92	40	3431.00
1892–93	50	4379.52

While the School has already been very much strengthened, its range of subjects enlarged, and its quarters improved, I wish to call especial attention to the fact that we ought, *in the immediate future*, to create a laboratory of Comparative Pathology, and provide for its maintenance; and that it is scarcely right that the School should expect Drs. Whitney and Foss to give their services without pay. I feel that I must lose no opportunity of urging the endowment of this totally unendowed School. As has been shown, we can use even a few hundred dollars a year to great advantage; for we have here a well-founded institution, at which a science of the widest usefulness to mankind, and the greatest humanity to dumb animals, is being well and thoroughly taught to good classes of bright and earnest young men; but this established institution is sorely in need of more room in which to carry on the work which its own prosperous career has brought it. It certainly seems remarkable to one who knows what has been accomplished by this Department of the University during its short life, and how much need there was that the subject should be taken up by a strong American university, that among all the generous givers to the higher education, among the many who are interested in questions of public health, and among all those who love horses and dogs, none have yet been found willing to give us material financial support. The School is not an experiment; it is an assured fact. Where else has a scientific school, in any subject, ever been established that has fought the battle of the higher against the lower education successfully without endowment of any sort?

CHARLES P. LYMAN, *Dean*.

THE VETERINARY HOSPITAL.

To the President of the University:

Sir, — I have the honor to submit my first annual report as "Surgeon in Charge" of the Veterinary Hospital.

Owing to the fact that I entered upon my duties the 1st of February, being the middle of the year 1891–92, no report was rendered for that period.

Finances. — The total receipts for the year 1892–93 were $20,533.97, an increase of $966.23 over those of 1891–92; and of $1,725.29 over those of 1890–91.

The total expenditures, including salaries of the Hospital staff, were $16,630.48, leaving a balance of $3,933,49, of which amount $3,764.71 was converted to cover the deficit made by the School; showing on the combined accounts a surplus of $138.78.

Improvements. — The sanitary condition of the Hospital has been greatly improved during the past year by the entire removal of all soft material used in the construction of stalls, which from its physical properties, as well as age, had become dangerous as a source of infection; the same being replaced by hard maple at an expense of about $300.

The Forge. — Some improvements have been carried out during the past year which were rendered imperative by the demand (which the increase of business) made for more room, at an expense of something like $200. Demonstrations have been given daily in this department to students of the third class.

The Hospital has been operated as far as possible with a view to the accomplishment of the ends for which it was built and is maintained, namely, as a clinical laboratory for the students of the School and to furnish a dispensary where the animals of the poor might be treated free of charge; both of which could be carried out satisfactorily and the department still remain self-supporting; but, unfortunately, we are confronted with the fact that the School makes a large annual deficit for which there is no provision. As a natural result this burden is thrown upon the Hospital, and in order to meet it, the management is obliged to utilize all available room for paying patients to the exclusion of the animals of the poor; thus to a great extent crippling its clinical facilities.

The possibilities of increased usefulness in our present limited quarters, and under existing circumstances, is out of the question;

and we live in the hope that at no very distant day some of our many charitable people, whose love of animals has led them into an investigation of the institution, may render us material aid; that its usefulness may not be thus curtailed.

As the result of an endowment of $100,000, or thereabout, in cash, beside large gifts of land, the Veterinary Hospital of the University of Pennsylvania is enabled to open its doors to charity patients, and close its report as follows: —

"The Hospital is really a public charity, 1578 animals being treated during the past year free of charge."

The records of the "Out Clinic" which is confined to animals that are brought to the Hospital for examination and advice only, show, that 735 horses, 377 dogs, and 44 other animals were presented during the year.

The Hospital has therefore been able to offer available clinical opportunities to students as follows: —

"Hospital Wards," daily examination and treatment,	29 horses	10,852
	16 dogs and other animals	5,840
"Out Clinics," horses, dogs, and other animals		1,056
Operations		483
Examinations for soundness		79
		18,310

A table appended shows the classifications and organs involved as they have been presented.

1892–93.	Genito-Urinary.	Locomotory.	Respiratory.	Circulatory.	Nervous.	Digestive.	Special sense.	Operations.	Skin Disease.	New Growths.	Exam. for Soundness.
November	6	59	17	3	7	24	7	43	12	7	8
December	6	42	15	3	10	37	19	30	16	6	4
January	12	47	18	3	9	25	7	41	14	7	5
February	8	67	18	3	6	31	9	46	12	7	2
March	5	65	20	5	8	35	8	27	13	7	3
April	8	63	27	3	9	24	8	44	14	9	6
May	7	73	26	7	12	34	15	56	13	9	15
June	8	70	31	5	6	31	9	42	23	11	8
July	10	50	26	3	14	42	8	51	22	7	5
August	5	65	24	6	8	35	10	35	32	5	11
September	6	58	20	3	10	38	9	20	29	3	5
October	9	57	15	5	5	45	16	48	36	11	7
Totals	90	716	257	49	104	401	125	483	236	89	79

During the past year there have been treated within the Hospital 606 horses, the combined treatment lasting over a period of 10,852 days; also 464 dogs, the combined treatment lasting over a period of 5737 days; also 39 cats, 3 cows, 3 hens, 2 monkeys, 1 parrot, 1 tortoise, the combined treatment lasting over a period of 263 days.

	Horses.	Other Animals.
Average number of days each animal remained in Hospital . .	19+	11+
Average number in Hospital per day	29+	16+

Instructions. — Special instructions have been given by the surgeons every morning, from 8 to 10, to members of the third class who assist in the application of dressings and care of all patients in the Hospital wards; the class being divided into threesections, Dressers, Dispensers, and Visitors, serving in rotation in their respective capacities.

While the dressers are performing their duties in the Hospital, the dispensers are preparing the necessary medicines and dressings, in the Pharmacy, under the direction of the Resident House Surgeon. The visitors in their turn attend all outside calls with the visiting surgeons which offers them opportunities of studying the differences between the methods pursued in Hospital and out-door practice.

Every morning, from 10 to 11, a clinical lecture is given in one of the wards to members of the first and second classs.

Monday, . . .	Dr. Howard.	Thursday, . .	Prof. Osgood.
Tuesday, . . .	Dr. LeBaw.	Friday, ...	Dr. Leonard.
Wednesday, . .	Prof. Lyman.	Saturday, . . .	Dr. Foss.

From 11 to 1, Surgical Operations, of which there were performed during the past year 483. Members of the first and second classes are expected to be present.

Examinations for soundness, out clinics, and out visits, are attended to when presented; it being impossible to have them all at any fixed hour; but as the members of the upper class devote the greater part of the day (when not engaged at lectures) to the Hospital, they receive the benefit from a large proportion of these cases. Autopsies have been made upon all animals dying in the Hospital.

"The subscription plan" as pursued by the Hospital is in my judgment open to serious objections; and I hope that some plan may be devised in the near future whereby it may be abolished. Under the present plan the Hospital is obliged to render medical service at a price much below the standard maintained by the profession.

These inducements were offered as a means of furnishing necessary clinical material for the School during its early days. This reason has ceased to become a factor in a fair consideration of the matter.

As has been shown the Hospital accommodation is insufficient for the present demand made upon it, with only thirty-one available stalls, and twenty kennels, and an average daily attendance of twenty-nine horses, and sixteen dogs, throughout the entire year, it will readily be seen that we are not only overcrowded, but perfectly able to furnish such clinical material for the School.

From a financial standpoint, by comparison of the figures for the years 1890–91, 1891–92, 1892–93, it will be seen that the receipts increase in proportion as the number of subscribers is diminished.

During the year 1890–91 when the receipts were $18,808.68 there were one hundred and ninety-one subscribers; during the year 1891–92 when the receipts were $19,567.74 there were but one hundred and seventy-seven; and during the year 1892–93 when the receipts were $20,533.97 there were only one hundred and nine subscribers.

The success of any professional school is, in a measure, dependent upon the interest and good-will of the profession at large. There is a lack of harmony between this School, and the profession, in this vicinity, which is mainly due to the subscription plan as pursued by the Hospital.

As the subscriptions are collected during the last month of the financial year, and applied to account of same (the benefits to be furnished the year following), it is impossible for the management to abandon this plan without some special provision being made for this amount. This change would result in a fair earning upon paying animals giving us a certain limited amount of room for charity patients. If gratuitous service is to be provided by the Hospital Staff, it should be given in full to charity patients, and not to subscribers, who are able to pay. After carefully watching the operations of the subscription plan and its results, I am convinced that it should be abolished whatever the results might be.

First, because it is unjust to the profession, and the graduates of the School.

Second, it is a ruinous policy from a business standpoint.

Third, it gives to those who can afford to pay, to the entire exclusion of those who cannot.

In conclusion I would say that a guarantee of $1500 to cover such loss for the current year would render possible its abandonment May 31st, 1894.

Hospital Staff. — During the winter of 1891–92 it was decided to offer to members of the graduating class an opportunity to serve as House Surgeons for a period of one year after graduation; selection to be made from applicants upon the result of a competitive examination; thus offering to successful students a further great opportunity of obtaining practical knowledge.

There is no salary attached to the position, but board and lodging is furnished by the Hospital.

These positions were satisfactorily filled during the year by George B. Foss, M.D.V., and Francis X. Mahoney, M.D.V., since which time Dr. Foss has served as resident House Surgeon, and received the appointment from the Corporation as Clinical Lecturer in the School. Otherwise the Hospital Staff remains the same.

The results obtained were only possible through the hearty support given me by my predecessor as well as the earnest coöperation and valuable aid rendered by the Assistant Surgeon and members of the Hospital Staff.

I wish also to acknowledge valuable contributions from members of the profession in Boston and vicinity for many cases of unusual interest sent by them to the Hospital for the benefit of the School.

Respectfully,

FREDERICK H. OSGOOD.

Boston, December 2, 1893.

THE LIBRARY.

To the President of the University:

Sir, — Three numbers of the *Bulletin of Harvard University* have been issued under the immediate charge of Mr. Lane and Mr. Tillinghast during the past year. Of the *Bibliographical Contributions*, also issued separately by the Library, two have been published, namely: No. 47, *Ninth List of Publications of Harvard University and its*

Officers, with the Chief Publications on the University, 1891–92, by W. H. Tillinghast, Assistant Librarian; No. 49, *A Bibliography of Persius* by Morris H. Morgan, Assistant Professor of Greek. *A Bibliography of North Carolina History*, by Professor S. B. Weeks is in progress in the *Bulletin*, and will be printed separately as No. 48 of the *Contributions*.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Principal Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	11,446	312,698	302,171
Law School	3,994	32,151	3,879
Lawrence Scientific School . .	109	3,445	561
Divinity School	658	24,593	4,525
Medical School	. . .	2,000	. . .
Museum of Zoölogy	633	23,476	300
Astronomical Observatory . .	285	7,461	9,367
Botanic Garden (Herbarium) .	139	6,399	3,655
Bussey Institution	75	3,375	. . .
Peabody Museum	31	1,274	1,602
Arnold Arboretum	5,000	5,000	5,500
Totals	22,370	421,872	331,560

If to this total of 421,872 volumes be added the 9416 volumes of the permanent collections in the laboratories and class rooms, (see below) we have a grand total of 431,298 volumes for the University Library, and if unbound pamphlets be included (as is the case in counting the contents of many European libraries) the total number is 762,858. Even this is not a fair test of comparison with the old world libraries, for often the number of titles in bound volumes of collected pamphlets, and the different specifications in collections of patent records are singly counted. The American system is to count books as bound, and not to separate their component parts in the enumeration.

The Whitney Library of Geology, a part of the collection in the Museum of Zoölogy, is only in part included in the count of the Museum Library; while on the other hand no deduction has been made in the general library for volumes parted with on exchange account.

The Medical School depends upon the Collections of the Boston Medical Library Association, kindly thrown open to its use.

The present extent of the laboratory and class-room libraries is as follows: —

	Permanent.	On Deposit.	Totals.
Laboratories.			
1. Chemical	511	117	628
2. Zoölogical	190	. .	190
3. Geological	90	. .	90
4. Botanical	579	. .	579
5. Physical	. .	333	333
6. Physical Geography	290	146	436
7. Mineralogical	130	177	307
Class-Rooms.			
1. Classical	2,680	138	2,818
2. History	1,113	1	1,114
3. United States History	754	. .	754
4. Political Economy	681	. .	681
5. Mathematics	196	136	332
6. French	594	. .	594
7. English	34	. .	34
8. Sanskrit	22	. .	22
9. German	322	. .	322
10. Social Questions	431	. .	431
11. Music	62	. .	62
12. Philosophy	245	14	259
13. Semitic	382	. .	382
Totals	9,416	1,062	10,368

An assistant is sent from the Central Library every week to examine the shelves of these libraries by the shelf-lists, and the titles of missing books are reported at once to the officer of instruction in immediate charge of the library where such loss or misplacement has been discovered. Temporary loans of books from Gore Hall are made to these libraries to facilitate the instruction of the several departments. In 1891–92 four of these libraries were open evenings for use when Gore Hall was closed.

Of the accessions to the Gore Hall Collections there were added by gift 4118 volumes and 13,770 pamphlets; and the accessions also include 841 volumes of bound serials (received in parts), and 827 volumes made by binding pamphlets.

The accessions of recent years to the University Library (excluding the laboratory and class-room libraries, but including this year for the first time the new collection at the Arnold Arboretum, the gift of Professor Sargent) have been as follows: —

In 1879 . .	10,389 vols.	In 1884 . .	12,360 vols.	In 1889 . .	12,253 vols.
" 1880 . .	7,247 "	" 1885 . .	14,558 "	" 1890 . .	16,051 "
" 1881 . .	9,804 "	" 1886 . .	9,191 "	" 1891 . .	13,276 "
" 1882 . .	9,192 "	" 1887 . .	11,924 "	" 1892 . .	13,785 "
" 1883 . .	9,818 "	" 1888 . .	16,468 "	" 1893 . .	22,370 "

The following table shows the use of books at Gore Hall in 1892–93 as compared with previous years: —

	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
1. Books lent out . .	62,861	65,689	68,892	74,906	70,036	71,434	80,380
2. Used in the building	12,041	15,267	14,299	17,203	15,861	19,648	23,671
3. Overnight use of reserved books .	20,052	20,360	21,802	24,989	21,706	20,469	24,482
Total (excluding No. 3, which is incl. in No. 1)	74,902	80,906	84,191	92,109	85,897	91,082	104,051
No. of books reserved	6,280	6,549	5,848	6,215	6,253	6,397	6,652

The extent of the number of books reserved — of whose hall-use no record is kept — has a tendency to decrease the number of volumes used in the building, of whose use record is made. The establishment of class-room libraries, is inducing a diminution of the figures against the class marked 3 in the above table. It is the observation, however, of those in charge of the reference service, of which no statistics are kept, that it is constantly increasing, year by year, and that the increase for last year was very great.

DELIVERY ROOM COLLECTION.

	1890–91.	1891–92.	1892–93.
Bound Periodicals	3,198	3,198	3,287
Reference Books	2,348	2,409	2,562
Totals	5,546	5,607	5,849

The number of students of the "Annex" who have borrowed books during the past six years is shown in the following table: —

BORROWERS FROM THE "ANNEX."

Years.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
1. Borrowers . . .	58	66	72	84	82	111	132
2. Books borrowed .	1,230	1,545	1,531	1,329	930	886	1,057
3. Reserved books .	383	301	299	286	284	127	25

The figures in the third class are included in class no. 2. More than half of the students of that institution use Gore Hall. Their own collection of 6000 books supplies naturally their main needs.

The following table shows for a series of years the use made of "Admission-Cards," by which students have access to special classes of the books for investigation at the shelves: —

ADMISSION—CARDS.

	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
History . .	52	68	74	71	81	53	36	41	59
Science . .	12	14	12	14	9	6	8	9	28
Art (incl. Music)	14	16	13	16	24	19	15	13	4
Literature .	42	49	62	54	27	32	38	45	62
Classics . .	53	52	47	42	24	22	18	22	26
Philosophy .	8	9	8	9	16	9	12	16	5
Theology . .	9	12	15	11	6	4	8	9	12
Polit. Econ. .	12	44	64	49	25	13	9	14	9
Total students	202	264	295	266	212	158	144	169	205
Times of use	4,020	5,820	7,375	7,980	8,390	6,490	2,512	3,629	4,560

STUDENTS' USE OF THE GORE HALL LIBRARY.

Students of	1887–88.		1888–89.		1889–90.		1890–91.		1891–92.		1892–93.	
	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity . . .	16	16	26	26	36	36	41	36	39	39	41	37
Law	215	175	217	138	254	151	279	147	363	165	394	161
Scientific . .	20	18	35	21	65	37	88	42	118	71	181	93
Resident Grad.	83	76	85	74	93	81	110	92	176	151	190	157
Senior Class .	237	234	214	206	278	254	289	260	271	251	327	300
Junior Class .	214	209	252	249	244	232	254	242	304	281	328	298
Sophom. Class	281	234	264	238	282	253	289	245	331	274	385	298
Freshm. Class	295	229	309	215	323	215	366	217	381	234	409	254
Sp. Students .	. .	. .	. .	. .	144	100	141	123	169	114	149	105
Totals . .	1331	1191	1402	1167	1719	1359	1857	1404	2152	1580	2404	1703

The percentage of users among the undergraduates during recent years is given in the following table, which shows, however, only such students as were registered at the general delivery desk in Gore Hall, and drew books at that desk: —

	1879–80.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Seniors	88	90	90	92	96	99	97	91	89	92	91
Juniors	83	88	93	96	90	98	99	95	95	92	90
Sophomores	83	85	86	93	92	94	90	90	84	82	77
Freshmen	65	80	80	78	69	77	69	67	59	61	62

Seventeen years ago only 57% of all the College students used the Library. In the last year, of the 1449 undergraduates only 299 failed to borrow books, and of this last number, 258 drew out "reserved books," of which no record was made at the General Delivery. This reduces the number of students, who made no recorded use of the library to 41 out of a total of 1449. The libraries of the class rooms and laboratories, as well as those of the students' clubs, provide reading, special as well as general, for a large number of undergraduates, including, very likely, some of the 41 who made no use of Gore Hall.

There is no record of the use made of the 514 periodicals, current numbers of which are on file in the Reading Room.

BORROWERS REGISTERED AT GORE HALL.

	1891–92.	1892–93.
Students	1,831	1,929
Instructors	196	160
Others	298	362
Total	2,325	2,451

SUNDAY USE.

	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Days open .	37	37	37	37	37	37	37	37	37
Users . . .	2,631	2,842	2,880	2,894	3,024	3,089	3,104	3,284	3,716
Average . .	71	76	77	78	81	83	83	88	100
Highest no.	105	108	118	106	108	118	132	119	135

Mr. Frank Carney, who has immediate charge of the shelves, reports that 6992 volumes have been permanently placed in the new stack since the last report, making 131,600 so placed out of the volumes constituting the Gore Hall collection. This includes a few classes for the first time arranged, namely: Modern Greek, 451 vols.; Angling, 1035 vols. (a collection given by John Bartlett, Esq. of Cambridge); Proverbs and Emblems, 350 vols. (also, mainly, the gift of Mr. Bartlett). A collection of American Poetry, mainly presentation copies to the late Professor Longfellow, numbering 586 volumes, have also been classified. They were the gift of his heirs.

Mr. Carney verified the shelf-lists of the classifications in the stack in July, showing about 170,000 volumes. The number of volumes which failed to be accounted for was 53. Of those reported missing in previous years 30 were found in their places, having been silently returned during the year. Of books reported missing since 1883 there are still 459 unaccounted for; 287 having disappeared from the reserved books, and 172 from the stack. Of these 53 unaccounted-for volumes of the year just closed 27 have disappeared from the books of reference, reserved books, and other collections exposed to the handling of all frequenters of the Library, the other 26 having disappeared from the shelves to which only the staff of the Library, officers of the College, and a limited number of other persons have access. In the stack, more cases than usual of disarrangement were discovered, 224 books being found on wrong shelves.

Mr. William C. Lane, who joined the service in 1881, immediately after graduation, and rose to become one of the two Assistant Librarians, left the library staff in the early part of the current calendar year, to become the Librarian of the Boston Athenaeum. His career in this Library had been honorable, and marked by intelligence and skill. The other Assistant Librarian, Mr. William H. Tillinghast, who had been in charge of the ordering and shelf departments, has also had the oversight of the Catalogue department, since Mr. Lane surrendered it, — the immediate supervision being in the hands of Mr. C. K. Bolton.

Mr. Bolton furnishes the following report of the work of the Catalogue department: —

TITLES CATALOGUED.

	1890–91.	1891–92.	1892–93.
College Library	7,494	9,082	7,969
Department and Class-room Libraries . . .	2,654	2,381	1,772
Totals	10,148	11,463	9,741

The work of the past year may be compared with the work of other years as follows: —

	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
1. Gore Hall cards prepared	32,580	29,229	23,696	21,256	24,384	21,252	27,167	23,975
2. Titles catalogued for departments	957	1,021	1,291	1,721	1,438	2,654	2,381	1,772
3. Volumes received in Gore Hall	6,730	9,108	10,885	9,045	13,140	9,606	9,726	11,446

The use of printed cards in the public card catalogue continues, 8831 having been printed, against 9598 for last year. About one-half of the accessions for the year are still catalogued on written cards.

I append a summary of some points in the more extended report which Mr. Bolton has made.

The experiment of type-writing cards for the public catalogue has been unsuccessfully tried. It was not found possible to get the impressions dark enough to be seen as readily in the drawers as cards written in ink are seen. There was no saving in time.

A thorough revision of the "Romance" section of the subject catalogue has been made. This labor in addition to the necessary revisions in all parts of the Catalogue, caused the handling of 14,455 cards during the year, in addition to those recently made for current accessions. The number of cards taken from the drawers for this purpose during the last five years have been: 18,717; 11,742; 13,086; 13,628; 12,903, which shows that revision to perfect the catalogue is onerous, and steady.

The titles of all books printed in 1890 and later appear in the Bulletins and in printed cards in the drawers. Important titles of an earlier date are also occasionally printed.

There are certain seasons when the force in the College printing office is directed entirely to work other than that of the Library, causing serious blocks in the service which it ordinarily renders in printing our catalogue cards. This enforced disorganization of our work is unfortunate for the Library and for those in the College who are dependent on prompt recording of new titles.

The number of volumes waiting to be catalogued October 1, 1893, was 2583. This number includes a few volumes of the Gurney and a large number of pamphlets of the Lowell gifts, most of the large collection on Angling and Fish Culture, given by Mr. John Bartlett, and a few smaller lots laid aside for work more pressing. The scant space in the Library for handling large gifts of books obliges the staff to work on such gifts in small lots. Any display of them on tables in large masses is prevented by the recurrent arrival of invoices of fresh books which require prompt attention.

The work of the Ordering department, also in charge of Mr. Tillinghast, and since Mr. Lane's departure, in the immediate charge of Mr. Potter, is shown in the following statement: —

At the close of the Library year the estimated cost of orders then out (including "continuations," reckoned at $6650) was about $11,211, and it was expected that about $6500 of these would come in, to be paid for during the coming year. We have an income for the next year of about $17,250; against this amount must be set off about $9335 (that is: orders out, $6535; periodicals and binding, $2500; freight, $300), leaving a free balance of $9335. It is further to be considered that some of the items included in our annual book-income are funds with such specific objects that they must be left out of view in providing for general purchases.

FINANCIAL CONDITION (*Gore Hall only*).

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
Income for books *	$20,407	$19,881	$16,682	$16,565	$18,824	$18,922
Spent	16,062	17,347	15,172	13,905	16,566	16,903
Balance	4,345	2,534	1,510	2,660	2,258	2,019
Appropriation . .	19,000	20,050	15,480	11,920	18,700	18,150
Unpledg'd balance†	12,080	11,238	5,672	9,602	9,501	8,284

PAYMENTS AND PURCHASES (*Gore Hall only*).

Years.	Income, exclud. balance brought forw'd.	Payments.	Vols. bought.	Vols. of serials added.	Sum of last two columns.
1884–85	$15,094	$16,534	5,932	560	6,492
1885–86	15,332	13,923	3,032	682	3,714
1886–87	17,052	14,549	4,490	746	5,236
1887–88	15,732	16,061	5,389	798	6,187
1888–89	15,799	17,339	4,925	638	5,563
1889–90	15,275	15,137	4,168	838	5,006
1890–91	15,853	13,905	3,230	855	4,085
1891–92	16,491	16,566	4,904	694	5,598
1892–93	16,008	16,903	5,624	841	6,465

* The items of income include unexpended balances of the previous year.

† What is called "unpledged balance" is income free from obligations for serials and outstanding orders.

The figures for income and payments, in the above tables, are taken from the the Treasurer's Report, except those for the last year, which are made up from the library accounts.

ESTIMATED AMOUNT IN DOLLARS OF ORDERS SENT TO PRINCIPAL AGENTS (*Gore Hall only*).

	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.
American	987	1,300	1,200	895	724	2,157	1,488
English	2,380	2,150	2,500	2,043	1,334	2,844	2,532
French	1,282	1,035	910	1,234	585	1,487	1,144
German	2,170	1,950	2,450	1,401	1,139	3,204	3,537
Italian	225	112	325	200	111	717	443
Scandinavian	21	56	106	52	50	78	81
Spanish.	. .	. .	. .	. .	. .	. .	158

The division among agents gives only an approximate representation of division by languages, since books in all languages may be bought in London, as Spanish and South American books usually have been, and Slavic books are mainly bought through the German agency. We usually buy more titles in German than in any other language.

TABULATION OF ORDERS (*University Library*).

Order slips on hand October 1.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Book orders out . . .	1,539	2,112	2,875	1,242	2,850	2,658	1,423
Continuation orders out	1,819	1,951	2,163	2,272	2,400	2,539	2,789
Total active orders .	3,358	4,063	5,038	3,514	4,750	5,197	4,212
Cancelled orders. . .	6,400	6,800	7,200	7,675	8,600	9,200	9,900
Deferred orders . . .	488	541	533	1,488	942	984	668
Countermanded orders	. .	. .	. .	943	. .	. .	. .
Grand total	10,458*	11,604*	12,977*	13,930	14,292	15,381	15,575

The estimated cost of continuations, which is a fixed liability for our book funds, — though only about one-half of the charges is likely to be actually incurred each year, owing to the irregularity of such serials, — has been growing rapidly of late years, as will be perceived from the following table: —

* Including some items now embodied in cancelled orders.

Year.	Estimated cost of continuations.	Total estimated cost, books and serials.	Continuations.
1880–81	$2,008	. . .	. .
1881–82	3,336	$12,345	. .
1882–83	4,567	15,956	. .
1883–84	4,821	20,495	1,422
1884–85	4,828	17,764	1,536
1885–86	5,163	14,228	1,637
1886–87	5,102	14,375	1,819
1887–88	5,770	14,855	1,951
1888–89	6,079	16,104	2,163
1889–90	6,191	17,186	2,272
1890–91	6,406	11,124	2,400
1891–92	6,732	19,318	2,539
1892–93	6,650	19,290	2,789

It needs to be stated respecting the last column that it includes continuations for class-room and other libraries, while the figures for the other columns make no account of the cost of such. These class-room serials have not been of any extent till recently.

Mr. Potter adds: "The percentage of continuations on which nothing has been received during the year is nearly 64% from all agents. I have in practice allowed for about one half to come in."

Our three principal foreign agents, in London, Leipzig, and Paris, procured for us books in the following proportions to their orders: Harrassowitz, 66%; Reinwald, 61%, Kegan Paul, 54%; others, 64%. We received during the year 9 English shipments, 9 German, 6 French, 3 Italian, and 2 Scandinavian.

The following table shows the number of books recommended to be bought for the University Library, the number of these already in the Library; the number ordered (including those reordered), and of these last the number for which there was reason for haste in transmitting the order: —

Purchases and Gifts.	1888–89.	1889–90.	1890–91.	1891–92.	1882–93.
Titles, Recommendations . .	4,904	4,404	4,545	4,326	5,396
In the Library	1,347	819	711	958	1,334
Ordered	3,056	2,505	4,863	3,598	3,744
In haste	165	128	122	197	220
Gifts in books and pamphlets .	9,815	12,673	9,992	5,566	17,888

It must be understood that the figures in a column have no relation to other figures in the same columns, for books may be recommended in one year and ordered in the following year, etc.

Since Mr. Henry C. Badger gave up the charge of the map collection in July, 1892, work in cataloguing the collection has ceased; but Mr. Walter Briggs has attended to the calls for assistance from those needing to consult the maps.

Mr. John H. Storer, Curator of Coins, reports: —

"The collection of coins has been placed in the map-room on the second floor of the Library, where it is accessible to students. The coins are exhibited between sheets of glass in upright frames swinging from a central post, thus permitting both sides of each coin to be examined. During the year three Roman coins have been added to the collection, the gift of Professor Palmer."

What I said last year about the insufficiency of Gore Hall for the uses of the library, I may repeat: —

"I have in earlier reports exhausted the language of warning and anxiety, in representing the totally inadequate accommodations for books and readers which Gore Hall affords. Each twelve months brings us nearer to a chaotic condition. The Library goes on with its natural accessions, and friends of learning give us the means to add more and more to our growth. We have as yet no assurance to give them that their gifts can be properly cared for and the use of their books properly regulated for the general good."

JUSTIN WINSOR, *Librarian.*

November 20, 1893.

THE HERBARIUM.

To the President of the University:

Sir: — During the past year the accessions to the Gray Herbarium have been numerous and valuable. Noteworthy among the collections received by gift or exchange have been the following: two installments of the herbarium of the late John Ball, Esq., amounting to 6000 specimens, from the Herbarium of the Royal Gardens of Kew, England; from the same source 596 plants collected at St. Vincent, W. I., by Messrs. H. H. and G. W. Smith, and 568 plants collected in Sierra Leone by G. F. Scott Elliot; from the Imperial Gardens of St. Petersburg, 390 specimens of Eastern Europe and Asia; from the Department of Agriculture, Washington, D. C., 410 specimens, largely from Florida, the Indian Territory and Mexico; from A. L. Winton and J. A. Allen, 676 specimens from Eastern North America; from H. N. Patterson, Esq., 180 exceptionally perfect specimens of plants of Colorado; from Miss Elizabeth Taylor, 50 boreal and artic plants; from the California Academy of Sciences, 273 specimens, chiefly of Lower California, including a number of valuable types; from the Herbarium of the Royal Gardens of Berlin, 105 specimens of *Nymphæaceæ* from the collection of the late Professor Robert Caspary, a specialist in this group; from J. F. Collins, Esq., of Providence, 280 plants of the Atlantic coast, many of them introduced; from Professor C. V. Piper, 140 mosses from the State of Washington; from Professor C. S. Sargent, 182 herbaceous plants from Nyassa Land, distributed from the Kew Gardens; from the Government Museum at Cape Town, 2 centuries of South African plants; from L. F. Henderson, Esq., 238 plants of Oregon; from C. G. Pringle, 300 plants from Central Mexico, including as usual, many new species, and furnishing most valuable and interesting material for systematic study; from the Misses Harris of Cambridge, 587 specimens of New England plants, being the herbarium of Dr. T. W. Harris, Sr.; from M. L. Fernald, 56 plants of Maine; from Professor O. D. Allen, 42 specimens from the base of Mt. Rainier; from C. F. Wheeler, Esq., 51 plants of Michigan; from Henry Eggert, Esq., 60 plants of Southern Missouri; from B. F. Bush, Esq., 54 plants of the same region. While several of the last mentioned collections are small in size, they have consisted of selected specimens, important in showing in many instances more accurately the geographic distribution of the plants represented. The following collections have been obtained by purchase: 1200 plants of New Zealand from T. Kirk, Esq., Curator of the Government Collections at Wellington, N. Z.; 1100 plants of Japan, collected by K. Watanabe; 1000 specimens of ferns of Trinidad from the Herbarium of A. Fendler; 1500 plants from the herbarium of J. C. Parlin, Esq. of North Berwick, Maine; 500 plants from Mt. Orizaba, collected by Mr. H. E. Seaton upon an expedition sent out by the University of Indiana in 1891; 320 plants of the Middle Atlantic States, collected by A. A. Heller, and including many fruiting specimens; 2 centuries of mosses and lichens from the Natural History Survey of Canada; 300 specimens of plants chiefly from North Carolina, collected by C. A. Kofoid: 300 plants of S. W. Virginia, collected by Messrs. J. K. Small and L. D. Reed; 128 plants, collected in Paraguay by Dr. Thomas Morong; 460 plants of Bolivia, distributed by Drs. N. L. Britton and H. H. Rusby. By way of summary, it may be said that more than 12,500 specimens have been received by gift and more than 7,000 acquired by purchase.

A large part of this extensive material has already been worked over and such specimens as were needed have been mounted and incorporated with the organized collection of the Gray Herbarium. The number of sheets of specimens so prepared and inserted during the past year is 14,208, which again considerably exceeds any annual addition previously recorded. Experience has shown it undesirable to insert specimens not fully determined, and an especial effort has been made to have all specimens completely and accurately named before insertion, although, for various reasons, it is occasionally expedient or indeed necessary to make exceptions to this rule, especially in the case of numbered specimens of well-known collectors.

There have been, during the year, several changes in the corps of assistants. From January 1st, 1893, Mr. C. G. Pringle has been appointed as regular collector for the Botanical Museum and Gray Herbarium. Since April he has been in Central Mexico, with two assistants. Only a part of his collection for the summer has as yet been received, but it is full of interest, since it contains not only many new plants but, what is equally important, many specimens which amplify the knowledge of hitherto obscure and imperfectly known species. Owing to favorable rains, the season in the region where Mr. Pringle has been collecting has been an exceptionally good one. January 1st, 1893, Miss Mary A. Day, of the Library of Clinton, Mass., was secured as Librarian. Beside taking charge of the routine library work and continuing the card catalogue, Miss Day has been able to relieve the curator of some of the bibliographical work connected with the continuation of the Synoptical Flora of North America, and has prepared a very useful index to the valuable botanical contributions of Dr. Sereno Watson. The additions to the Library have amounted to 139 volumes and 230 pamphlets. A suitable case for the card catalogue has been purchased and more than the usual amount of binding done.

In April, 1893, the Herbarium met with a serious and painful loss by the death of its Assistant Curator. Mr. H. E. Seaton, appointed to this position from September 1st, 1892, had in his brief connection with the Herbarium shown himself a conscientious, critical, and methodical worker and his loss from the Herbarium staff is keenly felt. Mr. Seaton had just finished some systematic work upon the Flora of Mexico and had, very fortunately, already embodied his results in several papers, completed but a few days before his death. In Auggust, Mr. J. A. Allen, an assistant, was compelled by ill-health to discontinue, for the present at least, his connection with the Herbarium.

During the mid-summer Mr. M. L. Fernald, another assistant, spent several weeks very profitably in exploring portions of Aroostook County, Maine, which is botanically one of the most interesting and least known regions of the Eastern States. The curator also made a short collecting trip to the mountains of North Carolina. Work upon the "Synoptical Flora," resumed in the autumn of 1892, has been continued at every available moment through the year, and the order of the *Caryophyllaceae*, which formed one of the largest gaps in Dr. Gray's manuscript of Part First, has been in great part monographed, a preliminary publication having been issued upon two of the three tribes, the *Sileneae* and *Polycarpeae*, and portions of the treatment of the third, more difficult tribe, the *Alsineae*, prepared in manuscript. By the loss of assistants to which reference has been made the Curator has of late had less time to devote to this work, but measures are being taken to secure further assistance, and it is confidently hoped that the progress of the coming year may be as rapid as possible considering the nature of the work. It is a pleasure again to express upon the part of the Herbarium staff sincere appreciation of the liberality of the Visiting Committee, whose gifts for present use have made it possible to make such large additions to the collections and to devote much time to investigation.

The publications of the Herbarium during the year have been as follows:

Description of New Plants collected in Mexico by C. G. Pringle in 1890–91, with notes upon a few other species. By B. L. Robinson. Proc. Am. Acad. xxviii. 165.

Additions to the Phænogamic Flora of Mexico, discovered by C. G. Pringle in 1891–92. By B. L. Robinson and H. E. Seaton. Ibid. xxviii. 103.

New and Little Known Plants, collected upon Mt. Orizaba in the summer of 1891. By H. E. Seaton. Ibid. xxviii. 116.

A Check-list of the Plants of Gray's Manual. Compiled by J. A. Allen. — It should be stated that the publication of this useful list and its sale at a price below cost, have been rendered possible only by the generosity of an anonymous friend of the Manual and of the Gray Herbarium.

Two New Plants from Washington. By B. L. Robinson and H. E. Seaton. Botan. Gazette, xviii. 237.

The North American *Sileneae* and *Polycarpeae*. By B. L. Robinson. Proc. Am. Acad. xxviii. 124.

BENJAMIN L. ROBINSON, *Curator*.

NOVEMBER 27, 1893.

THE BOTANIC GARDEN.

To the President of the University:

Sir: — As Director of the Botanic Garden, I have the honor of presenting the following report for the academic year, 1892–93: —

As matter of record, the annexed account of the weather for the year, and its effects on the plants cultivated by us, has been prepared by the head-gardener, Mr. Robert Cameron.

"The early part of the year was very satisfactory for all out-of-door plants. The favorable weather in the fall was taken advantage of by making several important changes in the herbaceous borders. A good many varieties were weeded out and their places filled by more showy and attractive ones. Although the winter was one of the most severe we have had for many years, very few of our more valuable out-door species were lost. The long period of steady freezing weather, which kept our plants in an unchanged condition from early winter until late in the spring, proved to be better for them than a more mild and capricious season. The long and very cold winter. increased our consumption of coal considerably above the average, and in consequence of the late chilly spring, we had to maintain the fires in the houses much longer than usual for some years back. The early part of the planting season was favorable to our seedlings, but the latter part of May and most of June were so dry, that the strongest seedlings suffered somewhat. We were obliged to expend a great deal of time and care in the judicious watering of the plots in the exposed portions of the garden, but the results were satisfactory. The two following months, closing the College year were exceptionally good for most of the plants, and as there was at this time plenty of rain, our total outgo for water purchased of the city, was not much more than in former seasons. We have, on the whole, not lost many desirable plants from any cause, in fact, the year has given us average results, although at considerable increased cost."

The most important change in the management of the open ground was undertaken during the autumn. The unused plat behind the Herbarium was broken up, trenched, and prepared for a nursery. The soil has proved to be of good quality and well adapted to the varieties of Gladiolus and allied plants for which we did not elsewhere have sufficient room. This section will answer also for experimental purposes.

It has become a serious question whether the largest trees in our Garden ought not to be cut down. Much of the lower part is now densely shaded by the smaller trees which have grown under the trees which were planted when the garden was established and it would seem at first sight that these latest comers should be sacrificed first. But it unfortunately happens that some of the finest trees in the garden have begun to show signs of decay and must soon become worthless if not indeed dangerous. The upper trees in the row next to the Garden Street fence have already died, and those nearest to them can have at the most but two or three years more to live. Every dead branch torn off in a heavy gale is liable to damage the flower-beds seriously: in the sudden storms of 1892 and this year some of our plants suffered from this cause. But it is so difficult to give up from our very scanty number of representative trees the specimens which date from the founding of the Garden at the beginning of the century and which have long been one of its greatest charms, that no sudden or very extensive clearing can be undertaken. We are fortunate to have as an adviser on our Garden Committee one whose success in the planting and care of trees is not rivalled in this country, and we shall rely on his counsel implicitly.

In early summer, after transfer of the plants, it was discovered that the so-called "Stove," the hottest of our greenhouses, was so badly affected by rot that extensive repairs would be necessary. It was an unpleasant surprise to find that the house was also infested by white ants, and that these pests had riddled many of the timbers, which on their surface seemed to be sound. Further examination showed that all of the tables and other supports in this house and the adjoining Palmhouse and Fernery needed a thorough overhauling on account of defective portions. After the work of repair was fairly entered on, it became apparent that it would be cheapest in the end to reconstruct in great measure the three buildings. If we had considered it at all safe to attempt to get through the winter with the houses in their dilapidated condition, all repairs would have been postponed. It was, however, evident that such an experiment would put in peril our large collection of exotics, many of which it would be hard to replace, without great expense.

The most interesting accession to our greenhouses during the year is the fine specimen of one of the larger tree-ferns of the southern hemisphere, *Todea barbara*, the gift of Baron von Mueller, the Government Botanist, of Victoria, Australia. He sent it in time for the World's Columbian Exposition at Chicago, which it would have reached had there not been vexatious delays in forwarding it from England. The Baron hoped that we should be able to have it exhibited there for a few months. But on its arrival in Boston its leavingout was already so far advanced as to render this impracticable, and it was therefore placed at once in our Australian house, where it now forms the chief attraction of an interesting collection.

Baron von Mueller has placed the University under great obligations by his generosity in many ways for a long period.

As promised in the last report, the work of arranging the economic collections at the Museum has gone on, until now the larger part is securely placed in jars for exhibition and for study by advanced pupils. Although this work demanded a very large expenditure of money at an unfortunate time, it was thought best to proceed with it, and thus keep the collections in safety. In short, the two large outlays referred to for the preservation of our collections seemed absolutely necessary. The work could not have been forced upon us at a more unpropitious season.

The display of economic products in the new exhibition room has made good progress, and will be carried on still further as soon as our income justifies it. Mrs. and Miss Ware have most kindly consented to the transfer to the economic room of those glass models in the Blaschka collection which can be utilized to illustrate the plants producing useful products. These specimens add much to the attractiveness of the exhibit.

Two large additions to the Ware Collection of Blaschka Glass models have been received during the year, and have been in part incorporated with the others. New cases have been constructed for the reception of the others now on hand and to arrive in February. The last models received are even more attractive than those which have preceded them. In May last the collections were formally presented to the University, by Mrs. and Miss Ware, and accepted by the Corporation.

It will probably surprise those who have not watched the rapid and symmetrical development of the Ware Collection, to learn that (exclusive of a large number of Cryptogamic and Histological models, of which no mention need now be made) there are no less than 365 species of flowering plants represented. These belong to 299 genera, and 86 orders, covering all the more important natural families of American Phaenogamia. Up to the present time it has been impossible to undertake the systematic arrangement of these in lineal sequence, but the new cases permit us to place each plant in its proper position in the natural system.

In selecting species for the Blaschkas to study, it has been my object to keep the collection symmetrical, so that visitors might gain from it a synoptic view. The artists have coöperated with me at every step, in some instances waiving their own preferences, as for instance in the matter of Central American Orchids, which lend themselves most admirably to this method of representation, and in which the greatest success has been achieved. Of this family we now have 26 species, a number which will be considered sufficient at this stage of the work. In the great orders, Compositae, Liliaceae, and Leguminosae, we have respectively, 21, 20, and 15 species now in hand for exhibition.

It was thought wise to add a few of these glass models to the Harvard Exhibit at Chicago. At the date of writing, these ~~have not~~ yet been returned. There presence here would slightly change the numbers given above.

The laboratories of Cryptogamic and Phaenogamic Botany have been filled nearly to their utmost capacity.

The following numbers of those attending the electives in Botany are, for convenience of reference, brought together.

Botany 1, Professor Goodale and Mr. Ganong	147
Botany 2, Professor Thaxter and Mr. Richards	30
Botany 3, Professor Goodale and Mr. Ganong	13
Botany 4, Professor Farlow and Professor Thaxter . . .	13
Botany 20*a*, Professor Goodale and Mr. Ganong	6
Botany 20*b*, Professor Farlow and Professor Thaxter . .	10
Summer-class, Professor Penhallow, of McGill University.	

Owing to the great increase in the size of the classes, it is necessary to replenish the laboratory supplies and make additions to our apparatus more frequently than formerly. It is found that the use of the same microscope by a section of three or four men, with the divided responsibility for its care, results speedily in the deterioration of the instrument. Many of our compound microscopes have been in constant use for the whole College year and by the summer classes, since 1873, and are not so serviceable as the students have a right to expect. To supply all the laboratories with the instruments which they need imperatively, would cost about two thousand dollars.

A careful analysis of our expenditures for the whole department comprised under the titles, Botanic Garden and Botanical Museum (including the Laboratories) shows that there is needed annually (in addition to our stated income from invested funds), three thousand dollars. For some years, the annual gifts for present use have met this want, or have nearly done so. The year just ended has been an exception. With extraordinary and absolutely necessary expenditures of large size for the preservation of our perishable material, there have been no large gifts: consequently the new year finds us with a considerable excess of expenditures over income. It is believed that the actual necessities of the same will appeal to the friends of the department.

The gifts of money for specific uses by the department are referred to in the Treasurer's report. These gifts have justified us in adding to and improving certain parts of our photographic collection, and have been most acceptable.

It is a pleasure to call attention to the addition of one thousand dollars to the Lowell Fund for the support of a Botanic Garden, by Miss Anna C. Lowell.

I am glad to bear witness to the efficiency of the Overseers' Committee on the Botanic Garden and that on Botanical Instruction. The members of these committees have been of much assistance in many ways, and their help has been sincerely appreciated.

GEORGE LINCOLN GOODALE, *Director.*

THE ARNOLD ARBORETUM.

To the President of the University:

Sir: — I have the honor to submit the following report of the condition and progress of the Arnold Arboretum during the year ending July 31, 1893.

During the year the Arboretum roads, begun ten years earlier, have been finished by the Park Department of the City of Boston and the public has now easy access to all parts of the Arboretum. The parkway which forms the eastern boundary of the Arboretum has been begun; and the inner slope roughly graded. It is now possible, therefore, to finish the arrangement of the collections with the exception of those which must occupy the undrained meadow near the Centre Street entrance which cannot be used until means for draining it are provided by the city. During the year the north slope of the Bussey Hill, where several years ago the Ashes, Lilacs, Catalpas, Elms, Mulberries, Birches and the arborescent members of the Pea family were planted in large open groups, has been graded and laid down in grass; and this part of the Arboretum is now finished. The planting of the year has been confined to the decoration of short stretches of roadside with native shrubs, but the completion of the grading near the Centre Street entrance and along the driveway connecting that entrance with the one near the Forest Hills railway station will make it possible to plant largely next spring. Preparations have been made for this; and there is now no reason why the Arboretum, so far as available space and material permit, should not be practically planted in three years more. The collections are in good condition, and the oldest trees in the systematic arrangement will soon be valuable for purposes of instruction. The nurseries have been enriched by many thousand seedling plants in about two hundred species raised from seeds collected by the director during a journey in Japan, made during the autumn months for the purpose of studying the forests of that country and introducing into the Arboretum a number of plants before unknown in our gardens.

The interchange of plants and seeds with other botanical establishments has been continued during the year. 10,635 plants (including grafts and cuttings) and 1743 packets of seeds were distributed as follows: To all parts of the United States 10,472 plants and 269 packets of seeds; to Canada 25 packets of seeds; to Great Britain 70 plants and 358 packets of seeds; to the continent of Europe 93 plants and 973 packets of seeds; to Japan 118 packets of seeds.

There have been received during the year 2135 plants and 699 packets of seeds.

During the year the Herbarium and Library have been moved into the Hunnewell Building and are now safely and commodiously housed. 2713 sheets of dried plants have been added to the Herbarium and 1900 specimens have been distributed. The principal additions have been 1225 sheets of Japanese plants from the Director; a set of Grecian plants from Mr. C. F. Franceschi; Mexican plants from C. G. Pringle; California plants from the curator of the California Academy of Natural Science, and various small collections from the Director of the Royal Gardens at Kew.

Specimens of woods, fruits and other tree products which have been accumulating for several years have been stored in the new building, although no attempt has yet been made to arrange them for purposes of public instruction.

Instruction of a practical character upon the trees and shrubs growing in the Arboretum was given by Mr. J. G. Jack in the autumn and spring to classes of men and women, principally teachers. Thirty lectures, each lasting from two to three hours, were given with an attendance of twenty-six in the autumn and thirty-two in the spring months.

The large amount of work which has been accomplished in all the departments during the year has been made possible by Mr. Frederick L. Ames and Mr. John L. Gardner, who have given large sums of money to increase the income of the Arboretum fund.

C. S. SARGENT, *Director.*

THE CHEMICAL LABORATORY.

To THE PRESIDENT OF THE UNIVERSITY:

SIR, — During the last year the crowding of the laboratories in Boylston Hall, referred to in my last report, has rendered still more evident the inadequacy of the present accomodations not only for our large elementary classes but also for the rapidly increasing number of advanced students. The need of separate rooms of moderate size for advanced students engaged on original work is especially felt. The cost of a new building of sufficient size adapted to modern requirements with the necessary endowments would be nearly half a million and such large gifts or bequests as this implies cannot be hoped for until the community is in a prosperous financial condition but this very important end should be constantly kept in view.

Meanwhile something has been done to remedy the want of ventilation in Boylston Hall, also dwelt upon in my last report. A system of exhaust fans run by an electro-motor with power furnished by the Cambridge Electric Co. has been added to the equipment of the new organic laboratory at a total cost of about one thousand dollars and involving a running expense of twelve and a half dollars per month. One exhaust fan (fourteen inches in diameter) for each of the seven hoods in the laboratory forces out the air through a ventilator of some size in the roof and maintains the atmosphere of this large room in good condition while the incoming air to supply the exhaust is heated by passing over radiators. The problem of ventilation has thus been happily solved for this one working room and the same system can be extended to the rest of the building.

The use of the larger lecture room in Boylston Hall by the large and ungovernable elementary class of the English Department has proved as was anticipated a great evil, and no delicate work is possible while the class is in the building. The ill-mannered, rough, and noisy boyishness is doubtless excited by the noisome odors incidental to chemical work, but our experience shows that a chemical laboratory is not a suitable place for such a course of instruction.

During the first part of the year careful attention was given to the preparation of the exhibit both of the Chemical Laboratory and of the Mineralogical Museum at the Columbian Exhibition. The manner in which these impressed an entirely impartial observer may be seen from the following extract from an article on the "Chemistry at the World's Fair" by Marcus Benjamin, Ph.D.: —

"Finally, there are in the gallery, two exhibits which are highly significant, the remarkable and interesting cases of chemical preparations shown by the German Chemical Society, and by the Chemical Laboratory of Harvard University. The former consists of over 1500 specimens of chemical compounds contributed to chemistry during the last twenty-five years by the German chemists in the laboratories of Aachen, Berlin, Bonn, Brunswick, Carlsruhe, Charlottenberg, Darmstadt, Freiburg, Göttingen, Greifswald, Heidelberg, Jena, Königsberg, Leipzig, Ludwigshafen, Mühlhausen, Munich, Münster, and Würzburg. They tell the story of organic chemistry. Harvard University has a similar exhibit that includes 300 samples of original contributions to science made in the laboratories in Cambridge . . . . an honorable and dignified memorial of what a single university has contributed to our beloved science."

The value of the new library and mailing room in Boylston Hall is more and more appreciated by the students of chemistry and its use is rapidly extending. Early in the year the number of volumes was nearly doubled by the addition of the chemical library of the late Dr. W. P. Dexter presented to the Department by his family.

During the past year the Mineralogical Museum has received valuable accessions chiefly through gifts. The most important of these is the Hamlin Collection of Tourmalines, purchased and presented to the University by Mr. James Garland of New York. The collection was purchased from Dr. A. E. Hamlin of Bangor, Maine, and has long been famous and associated with his family. Added to the specimens we already possess, it forms the finest suite of this interesting mineral which exists. The opportunities offered by the Columbian Exhibition has enabled the Director to obtain a number of unique specimens which have greatly enriched the collection. Among these a large mass of pink scapolite from Bolton, Mass., exhibiting on a polished surface the striking color of this variety of the mineral, and a section of a large trunk from the petrified forest of Arizona, deserve special notice. The specimen of scapolite was presented by Mr. John L. Gardner of the Scientific School. The interest taken in the collection, and its rapid growth, since its removal to the new Museum building have been very gratifying. It has become an important educational means, not only for the classes in mineralogy, but also for the whole community. It is open to the public on three afternoons of the week, when familiar talks about the specimens are constantly given by Dr. Huntington or myself. A wish has been expressed in many quarters that the museum should be open more freely, but much of the exhibit is far too valuable to be left unguarded. The value of the collection to the general public would be greatly increased by large descriptive labels which must be printed to secure attention. Such explanatory labelling has been begun, but without further aid it must be a long time before it can be finished. As stated in my last report such a large and valuable collection as this has become demands the constant services of an intelligent and efficient curator.

The number of candidates offering chemistry as one of the advanced or elective subjects for admission to College has been steadily increasing since the present scheme of admission examinations was adopted, and this year it has reached nearly or quite one hundred; and the number of preparatory schools which furnish the requisite preparation is as constantly multiplying. This year for the first time the Roxbury Latin School sent us a large contingent admirably trained. In most of the schools there is a hearty appreciation of the spirit of our requisition and an earnest purpose to meet it as nearly as possible, but in some cases there has been an obvious attempt to press a literal interpretation of the phrase "sixty experiments," and to substitute simple chemical manipulation for the training in methods which we require. Still on the whole the result is most gratifying and shows that the secondary schools are rapidly adopting efficient methods of training in experimental science.

The Summer School in Chemistry was as well attended as ever, and very efficiently conducted by Mr. Joseph Torrey. As has been the case from the first, the students were almost all teachers seeking a better preparation for their work and chiefly anxious to acquire a practical knowledge of experimental methods. The opportunities offered are of the greatest value to these teachers who have often considerable abstract knowledge of the subjects taught, but we have discouraged our undergraduates from seeking to substitute a course in the Summer School for one of the regular College courses. Although the ground covered may be essentially the same, the training is by no means equivalent, and we have, therefore, not been in favor of allowing the summer courses any credit on the College rank.

There were no changes in the laboratory instructors during the past year and but few changes in the regular laboratory courses. The Director was relieved of the oversight of the classes in quantitative analysis which were wholly delegated to Dr. Richards, while he resumed Chemistry VIII., a course on the History and Philosophy of Chemistry, and announced a new research course on Chemical Physics. The numbers attending the various courses were sufficient, as already stated, to overcrowd the laboratories in Boylston Hall, and the details of attendance will be found, as usual, in the reports of the several Deans.

The original work during the last year was unusually fruitful, and a number of papers entitled "Contributions from the Laboratory of Harvard College" were published in the *Proceedings of the American*

Academy, in the *Berichte of the German Chemical Society*, in the *Neue Zeitschrift für Anorganische Chemie*, and elsewhere. The titles of these papers, for the most part technical, will appear in the Bulletin of the Assistant Librarian.

JOSIAH P. COOKE, *Director*.

THE JEFFERSON PHYSICAL LABORATORY.

To the President of the University:

Sir, — The methods of laboratory instruction in physics, developed during the past fifteen years to a greater extent in this University than in any other institution, are now bearing fruit in the extension of these methods to the instruction in grammar schools and high schools. The exhibit of the physical department at the World's Fair at Chicago showed that schools and colleges throughout the country could make a saving in the total of many thousands of dollars by adopting apparatus which is reasonable in price and which can also give accurate results. In any endeavor, however, to take students beyond the mere elements of physics, a knowledge of trigonometry is required. In most preparatory schools a boy who is studying trigonometry is regarded by his associates with a species of awe. It is to be hoped, however, that the growth of intelligent methods of teaching elementary mathematics will keep pace with the adoption of rational methods of teaching physics, and that the number of students who come to college prepared on the higher course in laboratory instruction will increase.

The success, however, of a scientific institution like the Jefferson Physical Laboratory ought not to be estimated entirely by the number of students who are taking its elementary courses. I am inclined to believe that its true measure of success is in the number of well-trained teachers and investigators it sends forth; and in this sending forth of trained men one sees a method of university extension which cannot fail to be fruitful in results. Tried by this standard I believe that we can also point with pride to our results; for during the past three years we have supplied to other institutions one professor, one assistant professor, and two instructors in physics. Between three and four hundred students outside this University will thus receive the benefit of the training which these teachers have received here. During the past year two of our graduate students have gone into the practical applications of physical science. While, therefore, it may seem a very expensive process in education to maintain courses for one or two advanced students, it must be considered that these few well-trained men can extend the influence of this University to a larger number even than attend courses in physics in this University.

The rapid growth of new institutions, and the building of new laboratories in the West, will provide elementary instruction in laboratory methods more abundantly in the future. We cannot, therefore, relax our efforts to keep pace with the improvements that are being made daily in apparatus and methods of laboratory work. Graduate students will be attracted to the older institutions not by the facilities they offer such students for elementary instruction but by the means which they afford for becoming acquainted with the best work in their chosen subject.

The facilities for graduate instruction in the laboratories have been notably increased during the past year by the employment of a skilful mechanician who has been of the greatest service to the department. The additions to the physical apparatus of the Laboratory in the future will be found in the laboratories rather than in the physical cabinets; indeed, in my opinion, physical cabinets mark an era of the past; and the laboratory of the future must have, so to speak, live capital in the shape of working apparatus rather than inactive capital in pieces of apparatus which have merely an historical interest. The practical laboratories of Edison, and Elihu Thompson, and Weston, are exerting a healthy reaction upon the university laboratories by giving them a stir and activity which always comes from contact with realities. The ideal university laboratory should combine the highest theory with the best modern practice; and a mechanician who is thoroughly trained in practical devices is an essential officer in such an ideal laboratory. The regular work of instruction, both to elementary and to graduate students, can easily absorb the main portion of a teacher's energy and leave him but little time for the repair and adjustment of apparatus.

Besides the supervision of a laboratory course which requires constant tests of new apparatus and new methods of illustrating the subject, Professor B. O. Peirce has been engaged upon mathematical work which is to form the basis of attack of problems in mathematical physics. Professor Hall was engaged in writing up the results of research work which had occupied him for a considerable time. He published during the year one paper on a determination of the thermal conductivity of cast iron and cast nickel; two papers, one of them a revision of a previous one, on heat conduction in the cylinder wall of the steam-engine; and one, with Mr. A. L. Clough. on temperature changes of the "Hall effects" in various metals. He also continued his work upon a method, in some respects new, for determining the thermal conductivity of iron. In addition to his regular work of instruction he gave at the Jefferson Laboratory a course in elementary experimental physics to a class of twenty-two Cambridge grammar school teachers; the object of the course was to prepare these teachers for giving a similar course of quantitative experimental work in physics to their own classes. The Cambridge grammar schools are this year, 1893–94, giving such a course. A brief account of the work done with this class of teachers is given in the "Educational Review" for October, 1893.

Dr. Willson conducted during the year a course in practical astronomy. The methods of mathematical astronomy are extremely serviceable to students in physics, and the Laboratory gains greatly by the instrumental suggestions of Dr. Willson.

Mr. Sabine published during the year a laboratory manual, which embraces the experience of several years, in perfecting apparatus and suitable experiments for the higher grade of elementary laboratory instruction. He also devoted much time, thought, and energy to preparing the Harvard exhibit at Chicago.

The Director was occupied during the year with an investigation upon the energy consumed in carrying an electric charge through a dielectric like glass when the dielectric is placed in a powerful magnetic field. In the modern electro-magnet theory of light it is assumed that there is a displacement of electricity in a dielectric when the charge upon its bounding surfaces varies in intensity. For instance, when a Leyden jar is discharged by connecting the inside coating to the outer coating it is supposed that electricity is displaced through the glass. If this displacement takes place across lines of magnetic force there should be an expenditure of energy, and if this expenditure can be observed the hypothesis can be proved. The experiments were about to be finished last June when a defect was discovered in the apparatus which necessitates a repetition of the work, which will be repeated this year on a larger scale.

The Director published in the *American Journal of Science* and also in the *London Philosophical Magazine* a paper on the "Oscillation of Lightening Discharges," and of the Aurora Borealis. Under his direction Mr. Patterson and Mr. Arnold, Graduate Students, investigated the question of raising the frequency of electrical oscillations; a portion of their work was published in the *American Journal of Science*. Much time was also spent upon methods of studying the absorption of the ultra violet rays of light in different portions of the sky, with a view to the possibility of observing the Corona. These experiments were interrupted by the appointment of Mr. Campbell, a Graduate Student, to a travelling fellowship. The laboratory needs a larger departmental library, and each professor should have an assistant whose time should be entirely devoted to the graduate work of the professor: three or four intelligent Graduate Students can make great demand upon a professor's time, for there are both mathematical and instrumental difficulties to be overcome. With Graduate Students the professor may be said to be under a continual cupping process. He is like a lawyer with many cases and needs an assistant to look up precedents and to prepare briefs.

JOHN TROWBRIDGE, *Director*.

THE OBSERVATORY.

To the President of the University:

Sir, — The most important event to be mentioned in the present report is the completion of the new fire-proof brick building, and the transfer to it of about 30,000 stellar photographs. The second expedition to our Peruvian observing station has returned, and the third expedition has begun work successfully. The entire income of the Paine Fund, one of the largest gifts ever made to astronomy, is this year for the first time available for the use of the Observatory. Notwithstanding this important increase in our resources, the expenses due to additional work undertaken have also become greater, so that no new researches can be begun for the present. The addition to the Paine Fund will, however, compensate for the loss that this Observatory, like other American observatories, has suffered by the action of the U. S. Naval Observatory in depriving them of income from the sale of time signals. The expense of the second Peruvian expedition proved much greater than was anticipated, and has caused a considerable deficit in the Boyden Fund. The expenses for publication which are to be paid from the unrestricted portions of the income of the Observatory are likely to be large in coming years, and if possible a portion of the income should be reserved for a building fund, which will soon be required if the Observatory maintains its present rate of growth. The Observatory was represented at the Chicago Exhibition by a collection of about 250 photographs, and portraits of Bond, Paine, Boyden, and Draper.

Observatory Instruments.

East Equatorial. — The systematic observation of variable stars upon the system described in the last report continues to be the principal work of this instrument; but the photometric observation of the eclipses of Jupiter's satellites and the observation of comets are also carried on as before. The observer was Mr. O. C. Wendell, except that 9 of the 25 eclipses of Jupiter's satellites, photometric measurements of which were obtained during the year, were observed by the Director. The wedge photometer was used in 48 series of observations, comprising 3354 measurements, for determining the brightness of 1118 stars occurring in the Durchmusterung. Comet 1892 III. was observed 21 times for position, and was photometrically measured on 13 nights. Comet 1893 I. was observed 3 times, and Comet 1893 b 11 times, for position; the last was photometrically measured on 3 nights. One observation of the position of Comet 1893 c was also made. About 4000 measurements were made with the polarizing photometer, including (1) determinations of the relative light of the components of 65 of the brighter double stars, (2) determinations of the brightness of variable stars, including the new star in Auriga, which was observed on 8 nights, and (3) determinations of the brightness of faint comparison stars near circumpolar variables. The selection of these stars and the measurement of their positions also formed part of the work. Comparison stars selected from the Durchmusterung for a series of 60 variables have now been revised; one third of this work was done during the past year. Over 200 relative and as many absolute estimates of the brightness of variable stars were obtained, principally when they were faint; also 35 relative and as many absolute estimates of the brightness of the new star in Auriga. Some miscellaneous observations were likewise made.

Meridian Circle.—The reduction of the observations made with this instrument by Professor William A. Rogers continues under his supervision. The catalogue of the zone between the declinations + 49° 50′ and + 55° 10′ has been published and distributed, forming Volume XV., Part II., of the Annals of the Observatory. Volume XXV., containing the comparison of the positions in this catalogue with those of the same stars in previous catalogues, the resulting proper motions, and the comparison of the separate observations of each star with each other, has also been published. The printing of the journal of the zones is to be undertaken at once.

The reduction of the observations of the southern zone between the declinations — 9° 50′ and — 14° 10′ has been continued through the year. The work is complete with respect to the fundamental stars, except so far as it may be affected by the publication of their final places derived from observations elsewhere. Much work has also been done in reducing the observations of the zone stars. Observations of β Persei and the comparison stars proposed for it by Dr. Chandler were made on 10 nights, and the results were published in Volume XXIX. of the Annals of the Observatory.

Meridian Photometer. — Good progress has been made in the reduction of the photometric observations of the southern stars made in Peru by Professor S. I. Bailey. A portion of the catalogue is in type and the remainder is ready for the printer. Observations have been made by the Director with the meridian photometer on nearly every clear evening during the past year. The number of series is 107, and of separate photometric comparisons 46,272. The observations ordinarily last from seven to eleven in the evening; but last summer they were extended to one or two o'clock in the morning in order to complete the observation of the large number of stars in the Milky Way which can only be observed at that season. The observing list contains about 6000 stars, including the 4000 contained in the Harvard Photometry, which are thus reobserved. About three quarters of the observations required to complete this list, each star being observed on at least 3 nights, have now been made.

West Equatorial. — Mr. W. M. Reed made observations with this instrument on 87 evenings; these observations include 489 on variable stars, 1318 on comparison stars (among which are 178 made with the prismatic photometer mentioned in former reports), and 10 on the brightness of the comet discovered by Holmes. Meteors were seen passing through the field of the telescope on 25 occasions, and a record has been kept for 2 years of these phenomena, stating their place, movement, color, and other circumstances connected with them. 9 observations of aurora seen at Cambridge were made on 8 evenings.

HENRY DRAPER MEMORIAL.

The number of objects having peculiar spectra, which are annually discovered by Mrs. Fleming in her examination of the Draper photographs, has not diminished. The most important of these objects is a new star in the constellation Norma, whose spectrum was photographed at the Arequipa station on July 10, 1893, and of which no trace was visible on 13 plates taken from June 6, 1889, to June 21, 1893. Its spectrum appears to be identical with that of the new star which appeared in Auriga in December, 1891. 7 variable stars, T. Cassiopeiae, S Geminorum, T Geminorum, S Virginis, V Bootis, R Piscis Austrini, and S Aquarii, in addition to the 47 previously announced, have the hydrogen lines bright in their photographic spectra. 3 new variables have been discovered this year by means of this property. The number of stars of the fifth type has been increased by 10, making the total number now known of these objects 55. The hydrogen line F has been discovered to be bright in the spectra of BD. — 13° 893, magn. 5.8, and — 10° 1786, magn. 7.3. 10 stars have been shown to have spectra of the fourth type.

All of the spectrum plates have been carefully examined for the detection of objects of interest. The spectra of 20,149 stars on 190 plates having 60 minutes exposure have been classified for a revision and extension of the Draper Catalogue to include fainter stars and cover the entire sky. The number of photographs taken with the 8 inch Draper telescope is 2424; with the 11 inch, 1037. The latter include 213 photographic images of the spectrum of β Aurigae, 145 showing the principal lines double. The lines are double in 4 of the 94 photographs of ζ Ursae Majoris.

BOYDEN DEPARTMENT.

The second Peruvian expedition, under the direction of Professor W. H. Pickering, returned to Cambridge last spring after successfully observing the Total Eclipse of the Sun on April 16, 1893. Surveys were made which determined the positions and altitudes of various points in the Sorata range in Bolivia, and of Mt. Aconcagua in Chile. The most important astronomical work undertaken was the study of the members of the solar system by means of the 13 inch Boyden telescope. This included a study of the lunar rills and of variable spots upon the Moon and catalogues of them; of the diameters of the satellites of Jupiter, of their elongated shapes, the inclination of their axes of form, their axes of rotation, their markings, and the determination of the retrograde rotation of the first satellite; also a study of the markings of the planet Neptune. A series of measurements was also made of the double star α Centauri. These observations confirm the conclusion that the atmospheric conditions at Arequipa are particularly favorable for astronomical observations. It is extremely important that we should avail ourselves of the opportunities thus afforded by erecting at this station a telescope of the largest size. If this cannot be done, a telescope of 20 or 25 inches aperture would add greatly to our present knowledge of the surfaces of the planets and of other objects for which great magnifying powers are required. It is hoped that this matter will be borne in mind by those who wish by their gifts to advance astronomical science. The number of photographs taken with the 8 inch telescope was 250; with the 13 inch, 112. These numbers would be greater but that the cloudy season is included in the portion of the year here under consideration.

The third expedition, under the direction of Professor Solon I. Bailey, began work on April 4, 1893. Since then 1516 photographs have been taken with the 8 inch telescope and 852 with the 13 inch telescope. An eyepiece has been attached to the latter instrument so that the motion of the telescope may be controlled by an image formed by its own objective, thus dispensing with a finder. Very remarkable photographs have thus been obtained of the principal southern clusters. On a photograph of ω Centauri over 7000 stars were counted by Professor Bailey in a region 30′ square. 2 of these stars have been found to be variable, 1 being discovered by Mrs. Fleming, the other by the Director. Professor Bailey has shown that 3 stars are variable in the cluster 47 Tucanae. The images of the stars in these clusters are almost perfectly circular, although the exposure in some cases exceeded 3 hours. 104 photographs have been obtained with the 2½ inch Voigtländer doublet. The brightness of about one half of the stars south of declination —30, and brighter than the magnitude 6.3, has been determined visually.

Until recently the highest meteorological station in the world has been that established by this Observatory on Mt. Chachani at an elevation of 16,650 feet, After making a careful examination of the volcano El Misti, Professor Bailey has succeeded in establishing a station upon its top at an elevation of 19,200 feet. A path has been constructed by which mules have been led to the summit, and beside the meteorological shelter a wooden hut has been built upon the summit. A survey of the craters has been made, and a stone hut has been erected on the side of the mountain at a height of 15,600 feet. The temperature, pressure, moisture, and the velocity and direction of the wind are now being recorded at the summit station by self registering instruments. The sheets are changed at intervals, thus giving a record of atmospheric conditions at a height hitherto unattempted. The use of beasts of burden at these heights offers an opportunity in the future of carrying instruments and conducting experiments at altitudes heretofore regarded as inaccessible for these purposes. The mountain as seen from every direction is an isolated sharp peak. It is therefore especially suited for the study of the upper atmosphere.

The Bruce Photographic Telescope.

This instrument is now nearly completed, and photographs will be taken with it in a few days. So far as can be judged at present it seems likely to accomplish all that has been expected of it. The brick building with sliding roof to contain this instrument is finished and a large part of the mounting is in place.

Photographs have been taken with the Bruce transit photometer on

154 evenings, and when clear, throughout the entire night. A large part of them have been identified so that they will be immediately available, if required as in the case of the new star in Auriga. Good progress has also been made with the measurement of the forty thousand stars of the tenth magnitude which are being selected for standards for faint stellar magnitudes.

MISSCELLANEOUS.

Zodiacal Phenomena. — An effort has been made to obtain observations as nearly contemporaneous as practicable, and made at widely separated points, of the distribution of light in the zodiac, and particularly of the slight maximum of light nearly opposite the Sun, known as Gegenschein or Counterglow. Professor Barnard, of the Lick Observatory, kindly undertook to coöperate in this work, as did also Professor Bailey at Arequipa. Accordingly, during moonless nights in September, 1893, 36 observations were obtained; 13 of them by Professor Barnard, 3 by Professor Bailey and 20 by Professor Searle and Mr. Reed at Strafford, Vermont. Mr. A. E. Douglass also made some observations at Cambridge, notwithstanding the interference of the number of electric lights in this vicinity. The corresponding numbers of observations in October were 9, 3, and 35; the last were made by Messrs. Douglass and Reed, largely at Blue Hill, but partly at Cambridge and elsewhere. The conclusion of most immediate interest is that resulting from the comparison of the positions of the maxima of light observed at the different stations. In these no effect of parallax can be discerned.

Library. — The library of the Observatory has been increased during the year by the addition of 294 volumes and 715 pamphlets. The total numbers of volumes and pamphlets on November 1, 1893 were 7492 and 9460 respectively.

As the station at Arequipa, Peru, will be maintained permanently, it is desirable, owing to its remoteness, that it should have a library of its own. Copies of astronomical and meteorological works sent thither direct, or through this Observatory, will be gratefully received and will prove of much value.

Telegraphic Announcements. — The distribution of telegraphic announcements of discovery has been continued as in past years, although Mr. Ritchie has resigned his position as Assistant in the Observatory. Astronomers are requested to continue to send to this Observatory announcements of their discoveries for transmission to the observatories of Europe and America.

Buildings and Grounds. — On March 2, 1893, a transfer was made of a large portion of the contents of the west wing of the main building of the Observatory to the new brick building. Nearly thirty thousand glass photographic plates were transferred from one building to the other without serious accident. The greater number of the plates measured eight by ten inches, and the total weight of the glass was about eight tons. A rope was stretched from the old building to the new, and boxes each containing one hundred plates were attached to a pulley and allowed to run down. They were thus transferred at the rate of about six thousand an hour. Apart from the importance of protecting the photographs from injury, the new building proves of the greatest convenience in providing additional room for their examination, and for the corps of computers engaged in their study. The alterations in the residence made by the Director have been completed, and afford much additional space for the accommodation and entertainment of visiting astronomers.

Certain observations at Cambridge are each year rendered more difficult. The introduction of electric lights, especially in the vicinity of the Observatory, greatly interferes with the observation of faint objects. Additional trouble is anticipated from the proposed introduction of electric cars on Concord Avenue, which forms the southern boundary of the grounds of the Observatory. A more serious difficulty is apprehended from the proposed widening of Concord Avenue, which, if carried out, would bring the cars still nearer the instruments, and would necessitate cutting down the row of large spruce trees by which the instruments are now partially protected from the dust of the road. The citizens of Cambridge and the friends of the Observatory should be alike interested in saving this fine collection of trees from destruction.

Publications. — The following volumes in the series of Annals of the Observatory, some of which were mentioned last year as nearly complete, have been published and distributed: XV., Part II., XIX., Part II., XXV., XXIX., XXX., Part III., XXXI., Parts I. and II., and XL., Part I. Volume XL., Part II., has also been published and distributed. It contains the Blue Hill Meteorological Observations for 1892. The series of volumes is now complete to Volume XXII. inclusive. Volumes XXIII., Part II., XXVI., Part II., and XXVIII. are not yet undertaken. Volume XXIX., above mentioned as published, was completed by the addition of articles on the magnitude of bright stars north of +70°, and on meridian circle observations of β Persei. Volume XXX., Part IV., is not yet published. Volume XXXIV. has been begun and 112 pages are in type. It contains the results of the observations of the brightness of the southern stars made with the meridian photometer by Professor Bailey. Volume XLI. has also been begun, and 19 pages are in type. It will contain annual summaries of observations made by the New England Weather Service, to which the similar work of the New England Meteorological Society has been transferred. The summary for 1892 is almost completed. Thirty-two pages of meteorological observations made in Peru have also been printed. They have not yet been assigned to a volume.

Besides the volumes of Annals above mentioned, the following publications have appeared during the year:—

Forty-seventh Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1892.

A Large Southern Telescope. Circular issued last year and reprinted in Astronomy and Astro-Physics, xi. 783.

Publications and Photographic Illustrations issued by the Observatory of Harvard College. Cambridge, 1893.

The Astronomical Observatory of Harvard College. Circular describing the stations, instruments, and publications of the Observatory. Cambridge, 1893.

Improved Methods of Observing the Zodiacal Light. By Arthur Searle. Astronomische Nachrichten, cxxxii. 163.

Lunar Atmosphere and the Recent Occultation of Jupiter. By W. H. Pickering. Astronomy and Astro-Physics, xi. 778.

Mars. By W. H. Pickering. Ibid. xi. 849.

The Planet Jupiter and its Satellites. By W. H. Pickering. Ibid. xii. 193.

Jupiter's Satellites. By W. H. Pickering. Ibid. xii. 390.

The Rotation of Jupiter's Outer Satellites. By W. H. Pickering. Ibid. xii. 481.

Polar Inversions of the Planets and Satellites. By W. H. Pickering. Ibid. xii. 692.

Plato. By W. H. Pickering. The Observatory, xvi. 175.

El planeta Saturno y sus satélites. W. H. Pickering. La Gaceta Cientifica, Publicacion mensual de la Sociedad "Amantes de la Ciéncia." [Lima, Peru.] Año. ix. pp. 25–28.

ω Centauri. By Solon I. Bailey. Astronomy and Astro-Physics, xii. 689.

Observations of Comet 1893 I. By O. C. Wendell. Astronomische Nachrichten, cxxxi. 167.

Observations of Comet 1892 III. By O. C. Wendell. Astronomical Journal, xii. 119.

Observations of Comet g 1892. By O. C. Wendell. Ibid. xii. 128.

Second series of Observations on Comets f and g 1892. By O. C. Wendell.. Ibid. xii. 142.

Ephemeris of Comet 1892 VI. By O. C. Wendell. Astronomy and Astro-Physics, xii. 85.

Observations of Comets a, d, e, and f 1892. By O. C. Wendell. Astronomical Journal, xii. 157.

Note on Comet 1893 II. By O. C. Wendell. Astronomy and Astro-Physics, xii. 660.

Stars having Peculiar Spectra. By M. Fleming. Ibid. xi. 765.

Stars having Peculiar Spectra. By M. Fleming. Ibid. xii. 170.

Stars having Peculiar Spectra. By M. Fleming. Ibid. xii. 546.

A Field for Woman's Work in Astronomy. By M. Fleming. Ibid. xii. 683.

Stars that have been found variable in the Photograph. By W. M. Reed. Astronomical Journal, xiii. 62.

Swift's Comet. By A. E. Douglass. Astronomy and Astro-Physics, xii. 202.

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EDWARD C. PICKERING, *Director.*

THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President and Fellows of Harvard College: —

During the past year the usual courses of instruction have been given at the Museum in Zoölogy by Professor Mark, Dr. Slade, and Mr. Davenport, assisted in the laboratory work by Messrs. W. M. Woodworth, H. M. Kelly, and W. S. Nickerson.

Professors Whitney, Shaler, Davis, and Wolff gave courses of instruction in Geology, Palaeontology, Physical Geography, and Petrography. Messrs. Harris, R. T. Jackson, J. B. Woodworth, Griswold, Ladd, Ward, Landes, and Whitle were the Assistants in the Geological Department.

The Newport Marine Laboratory has, as usual, been open to advanced students in Zoölogy. An unusually large number of students have come to Newport this year to collect material for their winter's work. It will, however, be impracticable for me to accommodate so large a number again. Some other provision must be made elsewhere for the less advanced students, — at the Aquarium of the Museum, for instance, — if it is necessary to carry on an elementary summer school of Zoölogy.

We have to thank Colonel Marshall McDonald, United States Fish Commissioner, for facilities granted to our students in connection with their work at the Fish Commission Station at Wood's Holl.

The income of the Virginia Barret Gibbs Scholarship was divided, according to the terms of the gift, among three of the students who spent some of their time at the Newport Laboratory.

We have received during the year an anonymous contribution to be applied to the increase of Dr. Hagen's salary.

As will be seen from the reports of the different departments of instruction, considerable time was spent by the Professors and Instructors in preparing an exhibit for the Columbian Exposition, specially intended to illustrate the methods of instruction, and forming a part of the Harvard University exhibit. The Museum sent plans of the building, prepared under the supervision of Prof. Wolff, who also charged himself with advising the Harvard Camera Club in regard to the views of the most characteristic Exhibition Rooms of the Museum which accompanied them. The plans, and the photographs taken by the Camera Club and by Mr. J. L. Gardner, will be hereafter most useful in the preparation of an extended account of the Musuem of Comparative Zoölogy which it is intended to publish at some future time.

Photographs and plans of the Newport Marine Laboratory were also sent to Chicago, as well as a complete series of the publications issued in connection with the Laboratory, and of other publications relating to the Marine Fauna of the United States, written by officers of the Museum or naturalists connected with the different deep-sea expeditions sent out by the United States Coast Survey and United States Fish Commission, in charge of Louis Agassiz, L. F. de Pourtalès, or myself. Colonel Marshall McDonald kindly took charge of this exhibit, which was placed in the space assigned to the Fish Commission in the Government Building. Duplicate collections of these publications are in the libraries of the United States Coast Survey and of the United States Fish Commission.

We have been able to open the Museum on Sundays throughout the year, the Corporation having assumed the additional expense involved in providing the necessary service. The number of visitors has been greatly increased in consequence, and this has emphasized the need of additional and more general labelling of the collections for the benefit of the public. In the Systematic Collection the larger Mammals have been more prominently labelled, and the same has been done with the North American Mammals. With our limited means, considerable time must elapse before the labelling can be extended to the other rooms and the other classes of the animal kingdom.

I can only repeat what has been stated in former reports, that the increase of the classes in Geology and Zoölogy has been such as to render it desirable that the Geological Department should be accommodated in new quarters to allow for the expansion of the Zoölogical Department. The Geological Department could be housed in the southwest corner piece of the Museum, where large lecture-rooms might also be provided for the use of the Natural History Department. But there seems at present no probability of building such an addition to our building, which would require $100,000 for its erection and equipment.

During the past winter the Pacific Room, though far from complete, has been opened to the public. The most interesting specimens are its marine Mammals, the Seals, the Dugong, and Sea Otter; a collection of Birds from the Sandwich Islands to illustrate one of its characteristic insular faunae; and a typical collection of Fishes and of Invertebrates, which occupies the central cases of the room.

The Greene Smith Collection of Birds has been placed in the North American Room. New cases have been built to accommodate it, and the whole collection has been carefully examined and thoroughly cleaned by Mr. Clark, who has spent nearly a whole year upon this work. With this addition in place, we have every reason to be satisfied with our North American faunal exhibit.

The additional space devoted to the North American Birds has compelled us to remove the shore marine forms, which up to the present time have formed a part of the faunal exhibits. This has necessitated the rearrangement of the Marine Fishes and Invertebrates, and their remobal to the Pacific, Atlantic, and Indian Ocean Faunae, limiting the faunal exhibits of the Fishes and Invertebrates to the Land and Freshwater types, — a far more consistent geographical arrangement than the former mixture of terrestrial and marine faunal subdivisions. These changes have brought an unusual amount of work upon Mr. Garman, and especially upon Mr. Faxon, who has had the general supervision of this rearrangement. Several of the rooms of the oldest part of the Museum building have been thoroughly renovated.

Although we have received a small Hippopotamus, a few Gazelles, and an African Elephant, we still have some gaps to fill in the African and Pacific Faunal Rooms. The first invoice of material to illustrate the fauna of Japan has safely reached us.

Extensive changes and repairs in the Entomological Department have greatly facilitated the use of the collections. The collections of the Museum generally continue in good condition.

Upon Professor Faxon, who has been placed in charge of the collection of Invertebrates, has also fallen the principal share of the care of the Museum as a whole since he began his duties, and the improvement in the general appearance of the Exhibition Rooms is very marked. We are indebted to Professor Hyatt for the care he has given to the Palaeontological Collections in his charge, and to Mr. Brewster for his interest in supervising the arrangement of the Greene Smith Collection of North American Birds.

On the 9th of November Dr. Hagen died, in his seventy-seventh year after a lingering and painful illness of more than three years. Dr. Hagen joined the Museum staff in 1867, and until incapacitated in 1890 he devoted his time and energies to the interests of the institution with which he had cast his lot. In 1876 he refused an urgent invitation to assume the charge of the entomological collection of the University of Berlin, the greatest scientific prize perhaps in his department. He built up the exceptionally interesting biological collection of the entomological department from nothing, and the comparatively small collection of Insects which he found on entering upon his duties he has left greatly increased in size and value. His varied and extensive information was always at the service of the specialists who frequented his laboratory. During his connection with the Museum Dr. Hagen published a great number of papers on entomological subjects. Unfortunately for his influence on the progress of Entomology in this country his publications were usually printed in German.

With regard to the "Blake" publications, two additional memoirs have been published, — a Bulletin on the Northern Atlantic Mollusca collected by the "Blake" during the summer of 1880, by Miss Katharine J. Bush, and an elaborate monograph on the Paguridae by Professor Alphonse Milne-Edwards and Mr. Bouvier, illustrated with twelve quarto plates. Professor Milne-Edwards has also in hand a final memoir on the Crustacea of the "Blake." This leaves still to be published, of the work on the "Blake" collections, the memoir on the Alcyonaria, by Professor Verrill; the Deep-sea Fishes, by Professor Goode and Dr. Bean; the Comatulae, by Dr. Hartlaub; and a memoir on Pentacrinus, by Professor H. Ludwig.

Although not published under the auspices of the Museum, I should mention as forming a part of the results of the "Blake" an important paper by Dr. Wiren, on Solenogaster, a great part of which is based on the specimens dredged by the "Blake" in 168 fathoms off St. Lucia, in the winter of 1878–79, issued in the Memoirs of the Stockholm Academy of Sciences.

The available bulk of our Pentacrinus material has been sent to Professor Ludwig of Bonn, who has kindly consented to work up this genus from the collections made by the "Blake" in the West Indies.

A number of publications are in preparation in the different Laboratories of the Museum. The following work has been done during the past year on the Collections of the Fish Commission Steamer "Albatross" expedition of 1891. Mr. Westergren has nearly completed the plates (fifty in number) which are to accompany Professor Faxon's memoir on the Crustacea of the expedition. Mr. Faxon has already completed the text, and a preliminary report of the collection has been published in the Bulletin, awaiting the preparation of the plates for the final monograph.

Professor Ludwig also reports that he has completed the monograph on the Holothurians. A preliminary notice was published in the *Zoologischer Anzeiger* and in the Museum Bulletin. Professor Ludwig states that his report is to be illustrated by nineteen plates in all, of which eight will be colored plates. The plates are distributed among different families as follows: Synallactinae, one plate; Psychropotinae, five plates; Deimatinae, five plates; Elpidiinae, one plate; Dendrochirotae, two plates; Molpadiidae, three plates; Synaptidae, one plate; and Pelagothuriidae, one plate. The whole of his manuscript has been received, and the last plate is in the hands of Werner and Winter.

Professor Schimkéwitsch has sent in a report on the Pycnogonidae accompanied with two plates, Dr. W. McM. Woodworth a report on the Planarians, with one plate and Professor S. F. Clarke one on the Hydroids, with three plates. The illustrations of these papers are in the hands of the lithographer.

Mr. Scudder's Report on the Orthoptera of the Galapagos (three plates) has been issued, and a short Bulletin on the Rocks of the Galapagos has been published by Mr. George P. Merrill.

Excellent progress is also reported by Professor Hoyle, Dr. G. W. Müller, Dr. Ward, Dr. Bergh, Mr. Garman, and Professor Studer with regard to the various collections intrusted to their care. Professor H. V. Wilson spent some time at the Museum in examining our collection of Sponges, in preparation for his report on the Sponges of the "Albatross" expedition.

Owing to my prolonged absences from Cambridge, I have myself made little progress with the groups which I had selected to work up; but I hope during the coming year to be able to devote some time to them, and also to take up for publication the large amount of material on the Acalephs of the East Coast of the United States now in my hands. For nearly thirty years since the publication of the Catalogue of North American Acalephs, I have every summer, and frequently during the winter months also, paid a good deal of attention to the Jelly-Fishes of our coast. An immense amount of drawings and of undigested notes have thus accumulated. Their publication, as well as a revision of the papers on the same subject issued up to the present time in the Museum publications and elsewhere, would form an instructive and connected account of the Acalephian Fauna of our shores.

We have issued during the past academic year four numbers of Volume XVI. of the Bulletin [Geological Series], three numbers of Volume XXIII., completing the volume, and the whole of Volume XXIV. Of the Memoirs, we have issued No. 3 of Volume XIV., completing the volume.

About the usual number of volumes have been added to the Library, either by gift, exchange, or purchase. The number of volumes is now over twenty-three thousand.

As far as the available stock permitted, we have distributed a number of more or less complete sets of our publications to institutions and societies with which we have only lately begun to exchange. It has now become impossible for us to supply complete sets of our publications. Many parts of the earlier volumes both of the Bulletins and Memoirs are out of print, as the demand for certain numbers has far exceeded that for others.

We have purchased from Zeiss a complete microphotographic apparatus; during the summer months it will be available for the Newport Marine Laboratory, and during the rest of the year it will be at the service of the Museum officers.

In addition to the collections of the Albatross expedition of 1891 sent to the various specialists who have kindly consented to work up the material brought together, specimens were sent for examination to Professor Goode and Dr. Bean, to Professor Bütschli, to Dr. Steindachner, to Professor Lankester, to Dr. S. J. Hickson, and to Mr. Bigelow.

To Professor F. Eilhard Schulze was sent our collection of types of

Sponges from the deep waters of the Gulf of Mexico and the West Indies. This he has examined and already returned, with notes on the species suggested by his examination of the extensive series of Hexactinellidae from all quarters now in his hands for monographic purposes.

Our collection of North American Hydroids was sent to Dr. Camille Pictet, to be used in preparing a monograph on the Hydroids of the Bay of Naples for the Zoölogical Station. This collection reached Switzerland a few days before Dr. Pictet's death, and it has been returned by the authorities of the University of Geneva.

I hear from Professor Dupont that excellent progress is making with the cast of the Iguanodon which is to be sent from the Brussels Museum to Cambridge.

Arrangements have been made with Dr. Dohrn by which one of the tables of the Zoölogical Station at Naples has been placed at the disposal of the Faculty of the Museum for three years. The conditions upon which the table is assigned are as follows:—

> The Faculty of the Museum of Comparative Zoölogy will receive applications from candidates desiring to occupy the table at the Naples Zoölogical Station, which has been placed at its disposal from October 1, 1893.
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> The applicant must be (or have been recently) a student or instructor at some American University, preferably a person who has taken the degree of Ph.D. or S.D.; he must have published some creditable original investigation, and should be recommended as an able investigator by the professor under whom he has studied.
>
> Applicants will please forward to the Director of the Museum their recommendations, and a statement of their qualification, and of the subject to which they hope to devote themselves.
>
> In order that the Faculty may make the most satisfactory disposition of the table during the whole year, the applicants are requested to state the length of time they desire to remain at Naples, and also the earliest and latest dates within which they can avail themselves of the appointment.
>
> The Faculty will, at suitable intervals, nominate to the Corporation of Harvard College for approval the incumbent or incumbents for the year 1893–94.

A notice[1] of this arrangement has been sent to all the Universities and Colleges of the country, as well as to specialists interested in the study of Marine Zoölogy. I regret to say that thus far the number of applications has been most limited, and there does not appear to exist the imperative demand for the maintenance of the table represented by American zöologists. The Smithsonian Institution has also undertaken to supply this need for American students. The Faculty of the Museum nominated Professor Meek of Fayetteville, Arkansas, as the incumbent of the table for the coming winter, and this nomination has received the approval of the Corporation.

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[1] Professor James D. Dana was kind enough to give this notice the benefit of an insertion in the American Journal of Science.

During the past winter I spent three months exploring the Bahama Banks in the steam yacht "Wild Duck," which my friend, the Hon. John M. Forbes, was kind enough to place at my disposal for the purpose.

Mr. J. H. Emerton and Mr. A. M. Meyer accompanied me as draughtsmen and assistants. On our return to Nassau, after exploring the Great Bahama Bank and the shore of Cuba from Santiago de Cuba to Havana, I sent a short account of the progress of the expedition to Professor James D. Dana for publication in the American Journal of Science. Subsequently, we examined the Little Bahama Bank, and I am now preparing an account of the expedition for the Bulletin. I have to thank Colonel Macdonald, the U. S. Fish Commissioner, for the use of some deep-sea thermometers and of a Tanner sounding machine. Professor Menderhall, the Superintendent of the Coast Survey, was kind enough to appoint me Acting Assistant of the Coast Survey, as I had been already on former occasions while attached to the "Blake," in order to enable him to assist the expedition in various ways and to give it an official character. I have specially to thank the Hon. J. W. Foster, the Secretary of State, and Mr. Wharton, the Assistant Secretary, for securing the interest of the Spanish Minister at Washington, and the kind offices of the Captain General of Cuba in procuring for the "Wild Duck" free entrance to all ports of the Cuban coast, as well as the assistance of the naval authorities and of the governors of the various provinces which we visited. To Captain J. W. Wharton, the Hydrographer of the Admiralty, as well as to Lieut. Commander Richardson Glover, U. S. N. Hydrographer, I am also indebted for valuable information regarding the Bahamas. The cruise of the "Wild Duck," while not as successful as I hoped on account of the unusual violence of the trades, yet accumulated important information on the structure of the islands and banks, their geological history, and the theory of coral reefs. The Pelagic fishing, both at the surface and at moderate depths, which I hoped to make an important feature of the expedition, was quite limited, owing to the continous unfavorable weather we encountered. Still we made sufficient use of the deep-sea Tanner towing-net to confirm in general the results at which I had arrived while on the "Albatross," in 1891, regarding the limited bathymetrical range of the pelagic fauna. I may mention as one of the interesting catches a pelagic Amphioxus, of which the specimens we collected were sent to Professor Lankester for examination. Mr. Meyer devoted his time mainly to the study of the Acalephs collected during our trip.

To Dr. Theo. W. Richards, and to Mr. Churchill of the class of 1893, I am indebted for many analyses of the rock and bottoms, and to Professor Wolff for kindly preparing slides of some of the more interesting aeolian rocks from the Bahamas. The report of this reconnoissance of the Bahamas is well under way.

It is hoped that some arrangement may yet be made between the representatives of the leading Universities and the Fish Commissioner by which the exceptional facilities for marine research now existing at the Fish Commission Station at Wood's Holl may be made available for original investigation. It has been suggested that the Commission should continue to carry on the station as it now does, and supply to capable naturalists representing the Universities or independent specialists the mass of material which it cannot afford to have worked up. The Fish Commission can hardly be expected to devote any part of its limited appropriation on expenditures which have no direct bearing on the practical side of the fishery question. An extensive and expensive plant has been built up at Wood's Holl, which it seems useless to duplicate. It is more than is needed for the purposes of the Fish Commission. At least twenty persons properly qualified could be supplied with all they need for original work, provided these persons represented an outside interest able to carry on those investigations which are not directly in the line of the work of the Fish Commission, but which yet may prove of great value to it. By allowing the leading Universities to subscribe to a fund which should be sufficiently large to relieve the Commission of its purely scientific work, and to afford sufficient means for its publication, fifteen such subscribers might be found to bring together such a fund, and leave five places open to non-subscribers, to be filled by the governing board of the Station.

A governing board consisting of representatives of the government bureaus interested in subjects kindred to those of the Fish Commission, together with appointees of the subscribers from the leading Universities, might form a board of trustees empowered by Congress to carry on the Wood's Holl Station for the best interests of the Fish Commission and of the different branches of science connected with marine explorations. The vessels under the control of the Commission would, as far as practicable, also be available for the general purposes both of the Commission and of the scientific investigators. Such a combination as that suggested above would in no way interfere with the marine laboratories now or hereafter to be connected with the different Universities. The Wood's Holl Laboratory would be a permanent station, occupied during the whole year by the officers of the Fish Commission and the Scientific Director, and, in addition to the central station, well equipped laboratories would soon be established for all branches of the scientific investigation of the sea; and these permanent laboratories in their turn would be supplemented by expeditions of greater or less duration in the vessels connected with the Fish Commission. Should such a central station be found to work well, it would have a fair claim for support both from the government and the public.

A beginning might be made by securing an annual sum of five thousand dollars for five years from the Universities interested in this work, and a plan prepared to be presented to Congress for their approval. The position of the laboratory at Wood's Holl, and its connection with a government bureau, are perhaps the only drawbacks to enlisting the interests of Universities in the proposed scheme.

There will of course be some difficulty in devising a practical plan of co-operation between the Fish Commission and the representatives of the purely scientific interests of the country. The distance of Wood's Holl to the open Atlantic is also a very serious drawback. During the summers which I spent at Wood's Holl, my experience was that, while the shore fauna is perhaps as varied as that of more exposed parts of the adjoining coast, it is far less productive so far as the pelagic fauna is concerned which forms so great a share of the material of a marine laboratory. But with an ample equipment of sea-going launches and of larger boats such as are controlled by the Fish Commission, this is not a very serious difficulty. The expense of living at Wood's Holl is practically neither greater nor less than at other New England summer resorts.

I regret to report that the Visiting Committee of the Museum appointed by the Overseers have been unsuccessful in their efforts to obtain funds for some of the most pressing needs of the Museum. The committee have shown the greatest interest in attempting to supply the deficiencies to which their attention had been called by the reports of the Professors and of the Curator of the Museum.

Mr. W. E. D. Scott, who is greatly interested in the progress of ornithology in this country, is making the attempt to collect funds for an additional exhibition room of birds. The collection he proposes to bring together is to be modelled on the plan of exhibition which has been introduced with great success in the British Museum, and to a limited extent in the National Museum at Washington.

The plan embraces isolated cases of mounted birds, representing single species as life-like and at the same time as artistically mounted as possible. Next, cases illustrating the variation of such species as are non-migratory, but which range uninterruptedly over large geographical areas. Next, cases showing the dichromatic phases occurring in many families, as well as cases showing the various phases of appearance in any given species correlated with sex, season, age, etc.

There are many problems of a similar nature which have been brought into prominence during the past thirty years. Many of them can be illustrated in a satisfactory way to the public by exhibits of the different classes of the animal kingdom. The greater familiarity of the visitors with birds and insects will make it comparatively simple to explain to them the object of a limited exhibit of these classes. As regards the more general questions of development, and the multitude of minor problems which it would be interesting to place before the public, other classes must be selected, and the Director of any public Museum will only be at a loss to know what to exclude from the limited room usually at his disposal, so as not to occupy his available space with exhibits which, however interesting to the student, will only have a limited interest for the average visitor.

ALEXANDER AGASSIZ.

THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

To the President of the University:

Sir, — In my last report special reference was made to my connection with the World's Columbian Exposition as Chief of the Department of Ethnology. Upon accepting this appointment in February, 1891, it was understood that, with the exception of brief visits to Chicago, I should carry on the work of my department of the Exposition from Cambridge until the removal of my office to Chicago should become necessary. On the first of October, 1892, this was done and leave of absence from the University until January, 1894, was granted me. In December, 1892, I returned to Cambridge to attend the annual meeting of the Trustees of the Museum and to present my report. Since then I have been in Chicago.

Thus for a year I have been absent from the Museum and consequently have been obliged to direct the work there by correspondence, and to trust the immediate care of the Museum to the efficient and faithful services of Mr. Chick and Miss Smith with the aid of Mr. Carr. Mr. Saville has been employed in special work connected with the Yucatan and Honduras collections. Mr. Bowditch and Mr. Lowell have shown their deep interest in the Museum by visits and suggestions which have been of great importance to my assistants left in charge and have encouraged them in their labors. Thus while I have been absent from Cambridge the work at the Museum has continued without interruption; and, thanks to all whom I have mentioned, much progress has been made in the arrangement of collections in the new halls, one of which has been provided with cases and filled with the objects gathered by the several expeditions to Yucatan and Honduras during the past five years.

The Honduras Expedition. In my last report I referred to the starting of the second expedition to Honduras, November 6, 1892, under the charge of Mr. John G. Owens. Mr. Owens took with him Mr. George B. Gordon as engineer; Mr. George Shorkley as assistant; and Mr. Edmund Lincoln as photographer. This expedition set out with every prospect of accomplishing most important work. Mr. Owens, who had been on the previous expedition, was thoroughly acquainted with the ruins of Copan and knew just what should be done in order to secure the best results. He had made friends with the authorities of the Honduras Government, as well as with many influential persons at all places through which the party would pass on its way from the coast to the interior, and he had won the respect of all with whom he had come in contact during the previous year. The plans for the expedition were carefully made and the outfit was perfected from knowledge obtained the year before. Probably never before had an archaeological expedition started from this country with such favorable prospects or under a more energetic, enthusiastic, reliable leader.

For over three months all went well and very much was accomplished. Early in February Mr. Owens felt it necessary to go to the coast to attend to various matters connected with the expedition. Upon his return he was taken with a violent fever, from which he died on the eighteenth of the month. His death terminated the work of the expedition so far as further exploration was concerned, although his assistants did all in their power to carry out his last directions. To his trusted assistants he carefully explained what should be done, and to the last he was faithful to the task he had undertaken. His death was that of a hero, as grand in the field of science as any on the field of battle. Nothing could daunt his noble spirit. In the lucid moments of his last days, while struggling with the pains of his fatal sickness, his words were directed to those whom he trusted to complete as far as possible the work he had undertaken.

Mr. Owens was burried before one of the huge stone altars in the grand square of the ruins of Copan, where he had done so much in the cause of science and with which his name will ever be associated. A memorial tablet placed in the Museum amid the fruits of his labors will be a fitting tribute to the student and to the man.*

After the death of Mr. Owens, Mr. Gordon took charge of the expedition and brought out the objects that had been secured. He also completed the survey of the ruins and remained in the country several months longer than the other assistants in order to superintend the shipment of specimens and molds. To all three of the assistants we are much indebted for all that they accomplished under the trying circumstances.

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* John Gundy Owens was born in Lewisburgh, Pa., Sept. 25, 1865. Soon after this date his father, Captain John A. Owens, moved with his family to Alleghany, and there was begun the education of his son. The family returning to Lewisburgh, John was placed in school in East Buffalo and afterward in Pittsburg. In the fall of 1881 he entered the Lewisburgh Academy and at that time became a member of the Baptist Church. In 1883 he entered Bucknell College where he became a leader in athletic sports, was a member of several societies, and graduated third in his class. He was also a member of Company A of the Pennsylvania National Guard and utilized his spare time in camp by making a geological collection. In 1887 he became the teacher of Natural and Mental Sciences in the South Jersey Institute at Bridgton where he introduced the studies of Astronomy and Zoölogy. While at this Institute his mechanical genius was brought into prominence by his invention and personal manufacture of an apparatus for ringing the bells of the school by means of a clock attachment. The summer of 1888 was passed in the Marine Laboratory at Wood's Holl. In 1889 he came to the Harvard Summer School and later in the same season made a trip along the eastern coast as far as Grand Manan in order to collect and study marine animals. During the next year he joined the Hemenway Expedition to Zuni under the direction of Dr. Fewkes. In the fall of 1890 he entered the Harvard Graduate School in the Department of American Archaeology and Ethnology. The next summer he again accompanied Dr. Fewkes, this time on his expedition to the Moki pueblos, and there, winning a foot race over the fleetest Indian, he was christened "The Road Runner" and was initiated into the order of the Antelope. On his return from this trip he published a few papers upon subjects which he had studied while with the Indians. He also wrote, during one of his visits home, a paper on the Folk-lore of Union County, Pennsylvania, which was published in the American Folk-lore Journal.

The Hemenway Fellowship in American Archaeology and Ethnology was held from its foundation by Mr. Owens, who continued his studies in the Peabody Museum. Of the first expedition to Honduras in 1891–92 he was the executive officer. On his return from this expedition he was to go to the Moki pueblos to collect objects for the Columbian Exposition, but receiving an offer from Mrs. Hemenway to accompany Dr. Fewkes to the Madrid Exposition as a representative of the Hemenway South Western Expedition, his plans were changed. While in Madrid he also represented the Peabody Museum. Accepting the charge of the Second Honduras Expedition, he returned to Cambridge late in October and started for Honduras on the sixth of November, 1892, filled with enthusiasm and unbounded hope for the future.

During this expedition Mr. Owens made arrangements for taking molds of several of the immense carved monoliths at the ruins of Quirigua in Guatemala. Although he did not live to see this work finished yet his plans were carried out by Mr. Gorgonio Lopez who had been connected with the Honduras expedition of the previous year, and by the assistance of Mr. Thomas J. Potts of Yzabal to whom we are greatly indebted for aid to both expeditions. These molds from Quirigua were expected in Chicago in time to be cast for exhibition during the fair, but the death of Mr. Owens and other circumstances caused a delay and they were not received until October. Casts, however, will be made from them to be added to the other casts from Honduras and Yucatan for the new Columbian Museum of Chicago, and for the Peabody Museum in accordance with the original plan. All the specimens received from the two expeditions to Honduras and a full set of the casts, as well as the specimens and many casts from Yucatan, have been placed, during the past year, in the Central American hall of the Peabody Museum, where they have been arranged by Mr. Chick and Mr. Saville assisted by the important advice of Mr. Bowditch. Duplicates of many of these casts have been placed in the Boston Art Museum.

The unfortunate termination of the expedition of 1892–93 has prevented our placing another expedition in the field for this winter; but Mr. Alfred P. Maudslay is to visit the ruins as the authorized agent of the Museum and he will look after our interests in Honduras. Another year we trust to renew the work of exploration in a place where so much of scientific importance awaits thorough investigation.

Patrons of the Museum. Many gifts have been made to the Museum during the past year which have materially increased our collections, but owing to my absence I must defer special reference to them until a future report. Among them are important collections from Mr. Agassiz, Mr. Clarence B. Moore, and other constant contributors. Mr. Moore has also shown his continued interest in the Museum by a gift of five hundred dollars without restriction as to its use.

Mrs. Mary Copley Thaw has generously paid the cost of printing the memoir on Indian Music by Miss Fletcher, which was published in September as No. 5 of the Museum Papers. This paper is the result of twelve years' study and contains the words and music of nearly one hundred war, friendship, love and ceremonial songs. The

Memoir also contains a report by Professor J. C. Fillmore which is a scientific study of the structure of Indian music. The publication has been widely noticed and favorably commented upon, and has certainly given a mass of original material which throws new light upon the whole subject of primitive music.

The World's Columbian Exposition. As my work for the year has been in connection with the Exposition which has so recently passed into history, and as I was granted a leave of absence from the University in order to conduct one of the departments, it seems proper to refer to the Exposition and what was there done for anthropology. Never before has there been such a grand opportunity for students in all subdivisions of anthropology as in Chicago during the past summer. The gathering of peoples from all lands furnished to ethnologists the opportunity of studying the physical characteristics of the different races and the customs and peculiarities of various peoples exemplified in the many native villages established on the Grounds. The collections in the various buildings erected by the foreign governments included in many instances important archaeological and ethnological material. The collections in the United States Government Building, so admirably arranged to bring out the story they were designed to tell of man's struggle through savagery and barbarism, and supplemented by characteristic groups representing several of the principal Indian tribes, were studied by all interested in the results of Government work and the method of presentation. In this building also was the extensive Emmons collection from Alaska, remarkable for its completeness in presenting the arts of the natives of that region. In the Agricultural and Manufactures Building were many other archaeological and ethnological exhibits, extremely interesting and instructive. In the Anthropological Building, which was under my special charge, there was an exhibit of American Archaeology and Ethnology that has never been excelled; and in making this exhibit the Peabody Museum was no small factor. Here were casts of nearly all the molds taken in Yucatan and Honduras by the Museum expeditions, supplemented by the results of the special labors of Mr. Edward H. Thompson; while outside the building were fac-similes of portions of the ruined structures of Yucatan, cast from molds taken by Mr. Thompson and erected under his personal supervision. This remarkable group in itself well repaid our united labors and gave rise to thoughts which must bear fruit among the millions of people who examined the strange architecture here displayed. Associated with the Peabody Museum casts were a full set of the famous Charnay casts, and a number from the Berlin Museum representing Habel's discoveries in Guatemala. These, together with the many enlarged photographs taken by our expeditions and by Alfred P. Maudslay, formed the most complete series of sculptures and hieroglyphs from Mexico and Central America ever brought together.

The Museum was also most creditably represented by the collection, illustrating certain features of ancient Mexican art, secured by Mrs. Zelia Nuttall. Here were shown her original charts illustrating the reconstruction of the ancient Mexican Calendar, and one of the three known ancient Mexican books of maguey paper containing pictographs of much interest. Here also were shown her reproductions of many ancient Mexican shields and of the Mexican manuscript in the Florentine library. From South America were many Archaeological collections which together furnished the student with a large amount of new material. Most prominent in this section were the collections made by Mr. George A. Dorsey whose expedition to Peru, under the joint auspices of the Museum and the Exposition, furnished among other exhibits the one which probably attracted more attention and comment than any in the building. This was the reproduction of a portion of the "Ancient Burial Place at Ancon," showing the contents of nearly fifty graves just as they were found.

From various parts of North America there were collections in archaeology and ethnology made by many assistants of the Department. Among these assistants were several trained in the methods of the Peabody Museum whose work was conspicuous for its thoroughness and its careful arrangement to show the facts as they were found. I should like to refer to these in detail, but this will probably be done in another connection, when the history of the departments of the Exposition is prepared in a manner commensurate with their importance. Several other special assistants in the department who have not been connected with the Museum brought equally interesting collections from the regions entrusted to them. Particularly important was the exhibit from the northwestern coast of America under the special charge of my chief assistant, Dr. Franz Boas.

In addition to the collections secured by the Department, there were extensive private collections, notably that of Mr. Ed. E. Ayer, which furnished a remarkable gathering of material; while several foreign governments, notably Costa Rica, Mexico, Brazil, British Guiana, The Argentine Republic, Paraguay, Japan, and New South Wales, made extensive exhibits of the archaeology and ethnology of their countries. For the first time at an exposition the Greek Government made an official exhibit of ancient Greek art, which was placed where it could be compared with the art of other races.

A collection consisting of the games of all peoples was displayed in table cases extending the width of the building. This extensive and unique collection was systematically arranged as an ethnological study under the direction of Mr. Stewart Culin who also had charge of the exhibits illustrating ancient religions and the folk-lore of all peoples.

The northern gallery of the building was given up to the Anthropological Laboratory which was divided into sections of Physical Anthropology as follows: Anthropometry under the charge of Dr. Franz Boas and Dr. G. M. West; Neurology under Dr. H. H. Donaldson; and Psychology under Dr. Joseph Jastrow. In these several sections were arranged a large series of skulls and many skeletons of various races; preparations of the brain and nervous system of man; charts, diagrams and tables showing measurements and deductions, including observations obtained by the seventy-five assistants sent to the various Indian tribes of the country. Charts and tables relating to the growth and mental development of school children, and a large series of anthropometric and psychological apparatus obtained from universities and other sources in Europe and America were exhibited in these laboratories. In fact it was acknowledged that this was a most complete Anthropological Laboratory in all its sections. One division was given up to the illustration of physical development, and another to the special exhibit of Dr. Sargent's models of the typical college man and woman, and the illustration of his methods of taking measurements and obtaining statistics. These models attracted much attention and comment, and their exhibition in this connection has unquestionably been productive of much serious thought on the subject of the physical development of the American people.

Next to the Laboratories was a room for the Anthropological Library, under the charge of Mr. C. Staniland Wake, in which were placed the current periodicals on this subject from all countries, and several hundred volumes of standard works. The special object of this Library was to give information of the sources of information, and at all times of the day many persons were sitting about the tables noting the titles of the books and periodicals. On the walls were placed plans and photographs of the principal anthropological museums and laboratories. When it is stated that the Anthropological Building was 415 feet long and 250 feet wide, with a continuous gallery 40 feet wide, and that two-thirds of the floor space and about one-fourth of the gallery was occupied by the special exhibits to which I have alluded, a general idea of their extent can be formed. The remainder of the building was given up to the allied exhibits relating to History, Hygiene, Sanitation, Correction and Charities, and to several faunal collections of zoölogy and to other special and collective exhibits of Natural History.

The Department of Ethnology, while embracing some other groups in the classification adopted by the Exposition, was thus raised to an equality with the ten other exhibit departments. The name given to the building itself shows what an advance has been made in anthropology; and when it is understood that the exhibits in the department, unlike those of all the others, were in large part secured by research in the field carried on by special appropriations of the Directory of the Exposition, surely all students of anthropology have reason to be gratified with this acknowledgment of their science. Nor is this the only benefit to science, for there has now been started in Chicago as a result of the Exposition, particularly of the Department of Ethnology, a museum of science, art, and mechanics. This will be a memorial of the Exposition where will be placed material from all the departments; and in time under proper guidance it will be a centre of science in the midst of a large population where it will meet with continued support and will prosper according to its merits. The Columbian Museum has been liberally endowed by Mr. Field and other citizens of Chicago, and it has received from the Exposition a legacy of material which will enable it to start upon its career in a remarkable manner. All depends now upon the wisdom of its managers and upon the realization that extensive collections and unlimited funds cannot alone make a museum in the present understanding of all the name implies. That there will now arise in Chicago a museum in every way worthy of success and equal to the present demands of science and culture must be our sincere wish.

In the Harvard University exhibit in the Liberal Arts Building the Peabody Museum was represented by photographs of its several halls and by a case illustrating the Museum method of archaeological exploration in the field and its method of arranging collections. This special exhibit contained the field notes, drawings, and photographs relating to the exploration of an ancient Indian burial place in the Androscoggin valley, Maine, conducted under my direction by Mr. C. C. Willoughby. Every object found in the graves was arranged as found, while a series of photographs showed the position of the objects before they were taken from the graves. The method of exploration was further illustrated by a small plaster model, made by Mr. Willoughby, showing the excavations. Taken altogether this little exhibit was most creditable to Mr. Willoughby and to the Museum, and it was much commented upon by archaeologists. A similar collection from another locality, also arranged by Mr. Willoughby, was on exhibition in the Anthropological Building.

It is with much regret that I have to announce the death of Dr. D. Scott Moncrieff, a graduate of the Harvard Medical School, which took place on the coast of Siberia in August last. Dr. Moncrieff had been employed for the preceding two years as an assistant in the Department of Ethnology, in which capacity he had made important ethnological and archaeological observations and collections on the northwest coast of America. As it is of special importance to trace the connection between the peoples of the northwest coast of America and those of the opposite coast of Asia, Dr. Moncrieff decided to pass some years in this study and accepting the position of honorary assistant in the Peabody Museum he went to Siberia for this purpose. He had made numerous observations upon some of the coast tribes, when on one of his boating trips he was blown out to sea and drowned. His body was found on the island of Saghalian. When his notes and collections are received a further notice will be given of Dr. Moncrieff's life and work.

While appropriate action was taken by the Board of Trustees, in February last, on the death of Dr. Henry Wheatland who, as President of the Essex Institute, became a member of the Board during the second year of its organization and was for many years its secretary, I cannot close this report without adding my tribute of affection and regard for my life-long friend and my first teacher in science.

The Visiting Committee. Since the establishment of a special Committee of Visitors for the Museum its interests have been greatly extended by the activity of the members of the Committee who have not only given a personal oversight to the Museum but have held regular meetings for the discussion of ways and means for its benefit and advancement. In fact, owing to the peculiar construction of the Board of Trustees, it has become necessary for the Visiting Committee to take a prominent part in all that relates to the Museum as a teaching force in the University. In accordance with the views of the Committee a general course of lectures on Anthropology with Laboratory instruction will be offered for the last half of the present year, with the idea of extending the scope of the teaching in the Museum and offering the course to undergraduates as well as to graduates.

Cash Account. As in the last report, the money received on account of the Honduras expedition is not included in this report as it is kept as a special account by Mr. Lowell; neither are the incomes of the Thaw and Hemenway fellowships which have been paid by the Treasurer direct to Miss Fletcher and Mr. Owens, holders of the fellowships.

RECEIPTS.

Balance on hand from last account	$134.12	
Received gift from Clarence B. Moore	500.00	
" " " Mrs. Mary Copley Thaw	700.00	
" " " Mrs. N. E. Baylies (annual)	25.00	
" " " Charles P. Bowditch (glass for cases)	111.50	
" " " Miss Alice C. Fletcher (for copyright)	1.00	
" " " N. E. Telephone, Telegraph Co., (annual)	28.00	
Received from Harvard College, care of Semitic room one year,	52.00	
" " Honduras Expedition fund for lumber	12.65	
" " " " Maudslay's book, parts 1–2	20.46	
Refunded for express paid	2.65	
Reports and papers sold	25.14	
Received from F. C. Lowell, Treasurer, for instruction	112.50	
Received from F. C. Lowell, Treasurer, on account Visiting Committee Fellowship	41.66	
Received from F. C. Lowell, Treasurer, Income Peabody Fund	5814.01	
Received from F. C. Lowell, Treasurer, Income Peabody Fund 1893–94,	272.57	
		$7853.26

EXPENSES.

Building.		
Repairs, care and incidentals	$860.39	
Fuel, water, and gas	230.19	
Cases built	1120.57	
		$2211.15
Publications and Library.		
Printing Reports, Museum Papers, plates, engraving, and binding	691.76	
Books, subscriptions, and cards	26.81	
		718.57
Museum.		
Explorations and collections	63.88	
Making casts from Yucatan molds	81.48	
Model of Serpent Mound Park	489.50	
Photographing and materials	144.32	
Stationery	29.22	
Express, Postage, Telegraph and Telephone	269.09	
Incidentals	39.36	
M. H. Saville, Visiting Committee Fellowship	41.66	
Salaries	3400.00	
		4558.51
Balance to new account		365.03
		$7853.26

Respectfully submitted,

F. W. PUTNAM,

Peabody Professor of American Archaeology and Ethnology, and Curator of the Museum.

CHICAGO, December 16, 1893.

THE SEMITIC MUSEUM.

To the President of the University:

Sir, — Since the last annual report two cases of casts have been received from the Louvre and two from the Imperial Museum at Constantinople. These, with many other cases received in former years, are in the basement of the Peabody Museum, and most of their contents cannot be put on exhibition until we have larger quarters.

The other additions to the Museum collections during the year number slightly more than four hundred specimens.

Of gifts, we have received from Mr. James M. Barnard a set of the photographs taken in Asia Minor by Mr. J. H. Haynes, and from President D. C. Gilman, a copy of Haupt and Zehnpfund's reproduction of the Assyrian Deluge Tablet.

Of the acquisitions by purchase the most valuable are several collections of ancient Phoenician glass, in the form of dishes, bowls, goblets, vases, tear-bottles, etc. The manuscript department has been increased by the addition of six Syriac manuscripts. Various articles have been acquired which illustrate modern Palestinian and Bedouin life. Several collections of Babylonian objects, embracing clay tablets, engraved seals, commercial weights, etc., have been purchased.

About one thousand dollars ($1000) of the original gift of ten thousand ($10,000) remains in the treasury, but this remainder will be needed to make further payments on outstanding orders at Constantinople.

The Overseers' Committee on the Semitic Department have had under serious consideration the need of permanent and larger quarters for the Museum, and members of the Committee have made provisional subscriptions amounting to twenty-six thousand dollars ($26,000).

The resort to the Museum is very considerable. The collections furnish, not only to the students of language but also to those of history and of art, material for original work. They are thus serving one of the most important ends which the founder of the Museum had in view.

D. G. LYON, *Curator.*

December 20, 1893.

APPENDIX.

RESIGNATIONS.

Franklin Henry Hooper, Instructor in Laryngology, October 31, 1892.

Augustus White Long, Proctor, January 30, 1893.

William Henry Burr, Professor of Engineering, February 13, 1893, to take effect September 1, 1893.

Harry Fletcher Brown, Assistant in Chemistry, February 13, 1893.

William Coolidge Lane, Assistant Librarian of the College Library, March 14, 1893, to take effect April 8, 1893.

Edward Hickling Bradford, Instructor in Surgery and Orthopedics, May 15, 1893, to take effect September 1, 1893.

David Williams Cheever, Professor of Surgery, May 15, 1893, to take effect September 1, 1893.

Wiliam Henry Howell, Associate Professor of Physiology, June 12, 1893, to take effect September 1, 1893.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

Josiah Royce, to be Professor of the History of Philosophy, October 10, 1892.

Edward Channing, to be Assistant Professor of History for five years from September 1, 1892, October 10, 1892.

Henry Fiske Leonard, to be Instructor in Anatomy and Clinical Lecturer, October 10, 1892, from September 1, 1892.

Kuno Francke, to be Assistant Professor of German Literature for five years from September 1, 1892, October 31, 1892.

George Washington Cram, to be Recorder, March 14, 1893.

Edward Cummings, to be Assistant Professor of Sociology for five years from September 1, 1893, April 10, 1893.

Albert Andrew Howard, to be Assistant Professor of Latin for five years from September 1, 1893, April 10, 1893.

Barrett Wendell, to be Assistant Professor of English for five years from September 1, 1893, April 10, 1893.

Ira Nelson Hollis, to be Professor of Engineering, May 8, 1893.

William Fogg Osgood, to be Assistant Professor of Mathematics for five years from September 1, 1893, May 15, 1893.

Maxime Bôcher, to be Instructor in Mathematics, May 15, 1893, from September 1, 1893.

Byron Satterlee Hurlbut, to be Instructor in English, May 15, 1893, from September 1, 1893.

Philippe Belknap Marcou, to be Instructor in Romance Languages, May 15, 1893, from September 1, 1893.

David Williams Cheever, to be Professor of Surgery, Emeritus, May 29, 1893.

John Collins Warren, to be Professor of Surgery, May 29, 1893, from September 1, 1893.

Thomas Morgan Rotch, to be Professor of the Diseases of Children, May 29, 1893, from September 1, 1893.

James Jackson Putnam, to be Professor of the Diseases of the Nervous System, May 29, 1893, from September 1, 1893.

Amos Lawrence Mason, to be Associate Professor of Clinical Medicine, May 29, 1893, from September 1, 1893.

Edward Hickling Bradford, to be Assistant Professor of Orthopedics for five years from September 1, 1893, May 29, 1893.

Edwin Herbert Hall, to be Assistant Professor of Physics for five years from September 1, 1893, May 29, 1893.

John Cassan Wait, to be Assistant Professor of Engineering for five years from September 1, 1893, May 29, 1893.

Charles Benedict Davenport, to be Instructor in Zoölogy, May 29, 1893, from September 1, 1893.

George Wells Fitz, to be Instructor in Physiology and Hygiene, May 29, 1893, from September 1, 1893.

Max Poll, to be Instructor in German, May 29, 1893, from September 1, 1893.

George Santayana, to be Instructor in Philosophy, May 29, 1893, from September 1, 1893.

Robert Wheeler Willson, to be Instructor in Astronomy, May 29, 1893, from September 1, 1893.

Franklin Dexter, to be Demonstrator of Anatomy for five years from September 1, 1893, May 29, 1893.

Ernest Lee Conant, to be Instructor in History, June 12, 1893, from September 1, 1893.

Jere Edmund Stanton, to be Instructor in Oral Anatomy and Physiology and in Bacteriology, June 27, 1893, from September 1, 1893.

Eugene Hanes Smith, to be Instructor in Orthodontia, June 27, 1893, from September 1, 1893.

Waldo Elias Boardman, to be Curator of the Dental Museum, September 26, 1893.

[FOR ONE YEAR OR LESS.]

For 1892-93.

Perry Davis Trafford, to be a member of the Committee on the Regulation of Athletic Sports, October 10, 1892.

William Orison Underwood, to be Lecturer on Warranty and Evidence, October 10, 1892.

Lester Heard Howard, to be Clinical Lecturer, October 10, 1892.

Frederick Edward Cheney, to be Instructor in Ophthalmology, October 10, 1892.

Charles Townsend Copeland, to be Instructor in English, October 10, 1892.

Wesley Levi LaBaw, to be Demonstrator of Anatomy and Assistant Surgeon, October 10, 1892.

James Gray Lathrop, to be Instructor in Athletics, October 10, 1892.

Edward Fulton, to be Assistant in English, October 10, 1892.

Evarts Boutell Greene, to be Assistant in History, October 10, 1892.

Harry Sands Grindley, to be Assistant in Chemistry, October 10, 1892.

Harry McCormick Kelly, to be Assistant in Zoölogy, October 10, 1892.

Winfield Scott Nickerson, to be Assistant in Zoölogy, October 10, 1892.

Emberson Edward Proper, to be Assistant in History, October 10, 1892.

Herbert Maule Richards, to be Assistant in Botany, October 10, 1892.

Hubert Grover Shaw, to be Assistant in Chemistry, October 10, 1892.

George Warren Towne, to be Assistant in Physics, October 10, 1892.

Sidney Calvert,
Edward Everett Cauthorne,
George Washington Cram,
Theodore Herbert Gould,
Alfred Glaghorn Potter,
to be Proctors, October 10, 1892.

Henry Livingstone Coar, to be Instructor in German, October 31, 1892.

George Staples Rice, to be Instructor in Sanitary Engineering, October 31, 1892.

John Lincoln Ames, to be Assistant in Histology, October 31, 1892.

Manakshah Cowasji Bamji, to be Assistant in Chemistry, October 31, 1892.

Harry Fletcher Brown, to be Assistant in Chemistry, October 31, 1892.

Willard Peabody Gerrish, to be Assistant in the Observatory, October 31, 1892.

George Andrew Reisner, to be Assistant in Semitic Languages, October 31, 1892.

Benjamin Edward Carter, to be Proctor, October 31, 1892.

Horace Andrew Davis, to be Proctor, October 31, 1892.

Alexander Burr, to be Instructor in Meat Inspection, November 14, 1892.

Edgar Pierce, to be Assistant in Psychology, November 14, 1892.

Wesley Levi LaBaw, to be Curator of the Veterinary Museum, November 28, 1892.

Marshall Albert Barber, to be Assistant in Botany, November 28, 1892.

Benjamin Rand, to be Assistant in Philosophy, November 28, 1892.

Arthur Bliss Seymour, to be Assistant in the Cryptogamic Herbarium, December 12, 1892.

Charles Livy Whittle, to be Assistant in Petrography, December 12, 1892.

William Herbert Prescott, to be Assistant in Pathological Histology, December 27, 1892.

Henry Lee,
William Sturgis Bigelow,
Arthur Astor Carey,
to be Trustees of the Museum of Fine Arts, January 9, 1893.

Arthur Judson Oldham, to be Instructor in Mechanical Dentistry, January 9, 1893.

Thomas Hatfield Currie, to be Assistant in Mineralogy, January 9, 1893.

Alexander Lee Bondurant, to be Proctor, January 30, 1893.

Charles Knowles Bolton,
William Garrott Brown,
Frank Carney,
Alfred Claghorn Potter,
to be Library Assistants, March 14, 1893.

For 1893-94.

James Byrne, to be Lecturer on the New York Code, May 29, 1893.

Frederick Perry Fish, to be Lecturer on Patent Law, May 29, 1893.

Frank Brewster to be Instructor in the Peculiarities of Massachusetts Law and Practice, May 29, 1893.

John Edward Russell, to be Lecturer on Theology, April 10, 1893.

John Wesley Churchill, to be Instructor in Elocution, May 29, 1893.

Edward Hale, to be Assistant in Homiletics, June 12, 1893.

Francis Greenwood Peabody, to be Acting Dean of the Divinity School, June 27, 1893.

Washington Gladden, to be Lecturer on Minister and People, September 26, 1893.

Edward Everett Hale, to be Lecturer on Congregational Polity, September 26, 1893.

George Silsbee Hale, to be Lecturer on the Legal Aspects of the Ministry, September 26, 1893.

John Heyl Vincent, to be Lecturer on Pastoral Care, September 26, 1893.

LeBaron Russell Briggs,
Charles Joyce White,
Frederick DeForest Allen,
George Alonzo Bartlett,
Frédéric César de Sumichrast,
Charles Rockwell Lanman,
Freeman Snow,
Phillippe Belknap Marcou,
Charles Gross,
Hugo Karl Schilling,
Oliver Whipple Huntington,
Morris Hicky Morgan,
Albert Andrew Howard,
Edward Cummings,
Arthur Richmond Marsh.
William Fogg Osgood,

to be members of the Administrative Board of Harvard College, June 27, 1893.

James Mills Peirce,
James Bradstreet Greenough,
Crawford Howell Toy,
William Gilson Farlow,
Charles Loring Jackson,
Edward Laurens Mark,
Benjamin Osgood Peirce,
Hans Carl Günther von Jagemann,
Edward Channing,
William James Ashley,

to be Members of the Administrative Board of the Graduate School, June 27, 1893.

Nathaniel Southgate Shaler,
Henry Barker Hill,
Edwin Herbert Hall,
Paul Henry Hanus,
Ira Nelson Hollis,
John Eliot Wolff,
George Wells Fitz,

to be Members of the Administrative Board of the Lawrence Scientific School, June 27, 1893.

Elijah Winchester Donald,
Washington Gladden,
Leighton Parks,
John Heyl Vincent,

to be Preachers to the University, June 12, 1893.

Samuel McChord Crothers, to be Preacher to the University, September 26, 1893.

Edward Robinson, to be Lecturer on the History of Greek Art, June 12, 1893.

Richard Cobb, to be Assistant Secretary, June 27, 1893.

Cyrus Guernsey Pringle, to be Botanical Collector, February 13, 1893, for 1893.

Charles Townsend Copeland, to be Instructor in English and Lecturer on English Literature, May 15, 1893.

John Hays Gardiner, to be Instructor in English, May 15, 1893.

Hammond Lamont, to be Instructor in English, May 15, 1893.

Daniel Denison Slade, to be Lecturer in Comparative Osteology, May 29, 1893.

Heinrich Conrad Bierwirth, to be Instructor in German, May 29, 1893.

Alphonse Brun, to be Instructor in French, May 29, 1893.

Samuel Silas Curry, to be Instructor in Elocution, May 29, 1893.

Thaddeus William Harris, to be Instructor in Geology, May 29, 1893.

John Joseph Hayes, to be Instructor in Elocution, May 29, 1893.

Herman Wadsworth Hayley, to be Instructor in Latin, May 29, 1893.

Theodore Henckels, to be Instructor in French, May 29, 1893.

James Gray Lathrop, to be Instructor in Athletics, May 29, 1893.

James Lee Love, to be Instructor in Mathematics, May 29, 1893.

Alfred Bull Nichols, to be Instructor in German, May 29, 1893.

Frank Beverly Williams, to be Instructor in Roman Law, May 29, 1893.

William McMichael Woodworth, to be Instructor in Microscopical Anatomy, May 29, 1893.

Archibald Cary Coolidge, to be Instructor in History, June 12, 1893.

Joseph Torrey, to be Instructor in Chemistry, June 12, 1893.

William Nickerson Bates, to be Instructor in Greek, June 27, 1893.

Frederick Redman Clow, to be Instructor in Political Economy, June 27, 1893.

Benjamin Lincoln Robinson, to be Instructor in German, June 27, 1893.

Jay Backus Woodworth, to be Instructor in Geology, June 27, 1893.

Wilder Dwight Bancroft, to be Assistant in Chemistry, June 12, 1893.

William Tenney Brewster, to be Assistant in English, June 12, 1893.

Sydney Calvert, to be Assistant in Chemistry, June 12, 1893.

William Ernest Castle, to be Assistant in Zoölogy, June 12, 1893.

Frank Dyer Chester, to be Assistant in Semitic Languages, June 12, 1893.

William Duane, to be Assistant in Physics, June 12, 1893.

Frederick Levy Dunlap, to be Assistant in Chemistry, June 12, 1893.

Edward Fulton, to be Assistant in English, June 12, 1893.

Frank Bernard Gallivan, to be Assistant in Chemistry, June 12, 1893.

Leon Stacy Griswold, to be Assistant in Physical Geography and Geology, June 12, 1893.

Clement Collester Hyde, to be Assistant in Physics, June 12, 1893.

Herbert Lyon Jones, to be Assistant in Botany, June 12, 1893.

Hugh McCulloch, Jr., to be Assistant in English, June 12, 1893.

Frederick Chase McLaughlin, to be Assistant in Physics, June 12, 1893.

Winfield Scott Nickerson, to be Assistant in Zoölogy, June 12, 1893.

Benjamin Rand, to be Assistant in Philosophy, June 12, 1893.

Herbert Maule Richards, to be Assistant in Botany, June 12, 1893.

Elliot Folger Rogers, to be Assistant in Chemistry, June 12, 1893.

Harris Eastman Sawyer, to be Assistant in Chemistry, June 12, 1893.

Robert DeCourcy Ward, to be Assistant in Meteorology, June 12, 1893.

Robert Elwood Dodge, to be Assistant in Geology, June 27, 1893.
Martin Mower, to be Assistant in Fine Arts, June 27, 1893.
George Howard Parker, to be Instructor in Zoölogy, September 26, 1893.
Edward Vernon Morgan, to be Assistant in History, September 26, 1893.

Frank Cole Babbitt,
John Bigham,
Francis Gordon Caffey,
Sidney Calvert,
Edward Everett Cauthorne,
Horace Andrew Davis,
Arthur Morgan Day,
Carl Adolph Ewald,
Theodore Herbert Gould,
Herman Wadsworth Hayley,
Walter Reid Hunt,
Herbert Lyon Jones,
Frederick Chase McLaughlin,
Charles Louis Mix,
Lewis Kennedy Morse,
Winfield Scott Nickerson,
Alfred Claghorn Potter,
to be Proctors, May 29, 1893.

Montague Chamberlain,
Walter Cazenove Douglas,
Robert MacDougall,
Edwin Vernon Morgan,
to be Proctors, June 12, 1883.

William Ernest Castle,
Frederick Redman Clow,
Francis Stewart Kershaw,
to be Proctors, June 27, 1893.

Herbert Langford Warren, to be Instructor in Architecture, April 24, 1893.
Comfort Avery Adams, to be Instructor in Electrical Engineering, May 29, 1893.
Robert Tracy Jackson, to be Instructor in Palaeontology, May 29, 1893.
William Edward McClintock to be Instructor in Highway Engineering, May 29, 1893.
George Staples Rice, to be Instructor in Sanitary Engineering, May 29, 1893.
Henry Lloyd Smyth, to be Instructor in Geological Surveying, May 29, 1893.
Arthur Leon Giblin, to be Instructor in Engineering, June 27, 1893.
William Vaughan Moses, to be Instructor in Drawing and Machine Design, September 26, 1893.
Daniel Lawrence Turner, to be Instructor in Surveying and Railroad Engineering, September 26, 1893.
Arthur Newhall Johnson, to be Assistant in Drawing and Descriptive Geometry, September 26, 1893.
Henry Burroughs Lloyd, to be Assistant in Drawing and Surveying, September 26, 1893.
George Lewis Swendsen, to be Assistant in Surveying, September 26, 1893.
Charles Levy Whittle, to be Assistant in Mineralogy, September 26, 1893.

Samuel Holmes Durgin, to be Lecturer on Hygiene, May 29, 1893.

Theodore Willis Fisher, to be Lecturer on Mental Diseases, May 29, 1893.

Edward Marshall Buckingham, to be Instructor in Diseases of Children, May 29, 1893.

Herbert Leslie Burrell, to be Instructor in Clinical Surgery, May 29, 1893.

Arthur Tracy Cabot, to be Instructor in Genito-urinary and Clinical Surgery, May 29, 1893.

William Merritt Conant, to be Instructor in Anatomy, May 29, 1893.

Elbridge Gerry Cutler, to be Instructor in the Theory and Practice of Physic, May 29, 1893.

Francis Henry Davenport, to be Instructor in Gynaecology, May 29, 1893.

William Whitworth Gannett, to be Instructor in Clinical Medicine, May 29, 1893.

Charles Montraville Green, to be Instructor in Obstetrics, May 29, 1893.

Samuel Jason Mixter, to be Instructor in Surgery, May 29, 1893.

Henry Parker Quincy, to be Instructor in Histology, May 29, 1893.

Herman Frank Vickery, to be Instructor in Clinical Medicine, May 29, 1893.

Charles Francis Withington, to be Instructor in Clinical Medicine, May 29, 1893.

Walter Lincoln Burrage, to be Clinical Instructor in Gynaecology, May 29, 1893.

Frederick Edward Cheney, to be Clinical Instructor in Ophthalmoscopy, May 29, 1893.

Algernon Coolidge, to be Clinical Instructor in Laryngology, May 29, 1893.

Edward Cowles, to be Clinical Instructor in Mental Diseases, May 29, 1893.

Thomas Amory DeBlois, to be Clinical Instructor in Laryngology, May 29, 1893.

John Woodward Farlow, to be Clinical Instructor in Laryngology, May 29, 1893.

George Washington Gay, to be Clinical Instructor in Surgery, May 29, 1893.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, May 29, 1893.

John Homans, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, May 29, 1893.

Philip Coombs Knapp, to be Clinical Instructor in Diseases of the Nervous System, May 29, 1893.

Abner Post, to be Clinical Instructor in Syphilis, May 29, 1893.

George Lincoln Walton, to be Clinical Instructor in Diseases of the Nervous System, May 29, 1893.

George Hamlin Washburn, to be Clinical Instructor in Gynaecology, May 29, 1893.

Arthur Patterson Chadbourne, to be Demonstrator of Experimental Therapeutics and Pharmacology, May 29, 1893.

Henry Jackson, to be Demonstrator of Bacteriology, May 29, 1893.

John Cummings Munro, to be Assistant Demonstrator of Anatomy, May 29, 1893.

Charles Locke Scudder, to be Demonstrator of Surgical Apparatus, June 27, 1893.

James Homer Wright, to be Assistant in Pathology, May 15, 1893.
John Lincoln Ames, to be Assistant in Histology, May 29, 1893.
Vincent Yardley Bowditch, to be Assistant in Clinical Medicine, May 29, 1893.
William Allen Brooks, to be Assistant in Anatomy, May 29, 1893.
Alexander Burr, to be Assistant in Bacteriology, May 29, 1893.
John Wheeler Elliot, to be Assistant in Clinical Surgery, May 29, 1893.
Edward Miller Greene, to be Assistant in Histology, May 29, 1893.
Frank Bishop Harrington, to be Assistant in Clinical Surgery, May 29, 1893.
Henry Jackson, to be Assistant in Clinical Medicine, May 29, 1893.
George Howard Monks, to be Assistant in Clinical and Operative Surgery, May 29, 1893.
Jay Bergen Ogden, to be Assistant in Chemistry, May 29, 1893.
Charles Allen Porter, to be Assistant in Anatomy, May 29, 1893.
William Herbert Prescott, to be Assistant in Pathology, May 29, 1893.
Edward Reynolds, to be Assistant in Obstetrics, May 29, 1893.
Charles Locke Scudder, to be Assistant in Clinical Surgery, May 29, 1893.
George Gray Sears, to be Assistant in Clinical Medicine, May 29, 1893.
Myles Standish, to be Assistant in Ophthalmology, May 29, 1893.
Arthur Kingsbury Stone, to be Assistant in Bacteriology, May 29, 1893.
John Baker Swift, to be Assistant in Gynaecology, May 29, 1893.
Benjamin Tenney, to be Assistant in Anatomy, May 29, 1893.
Charles Wendell Townsend, to be Assistant in Obstetrics, May 29, 1893.
Francis Sedgwick Watson, to be Assistant in Clinical and Genito-urinary Surgery, May 29, 1893.
Arthur Howard Wentworth, to be Assistant in Diseases of Children, May 29, 1893.
Charles Pomeroy Worcester, to be Assistant in Chemistry and Secretary of the Medical Faculty, May 29, 1893.
William Sohier Bryant, to be Assistant in Otology, June 27, 1893.
Edwin Wells Dwight, to be Assistant in Pathology, June 27, 1893.

Sidney Roland Bartlett, to be Instructor in Mechanical Dentistry, June 12, 1893.
Harry Oliver Bixby, to be Instructor in Mechanical Dentistry, June 12, 1893.
Arthur Warren Eldred, to be Instructor in Mechanical Dentistry, June 12, 1893.
George Howard Monks, to be Instructor in Surgical Pathology, June 12, 1893.
Arthur Henry Stoddard, to be Instructor in Mechanical Dentistry, June 12, 1893.
George Lincoln Walton, to be Instructor in Neurology, June 12, 1893.
Edwin Carter Blaisdell,
Waldo Elias Boardman,
Frederick Bradley,
Benjamin Howard Codman,
Forest Greenwood Eddy,
Henry Webster Gillett,
Ellis Proctor Holmes,
Frederick Sylvanus Hopkins,
Leonard Nutter Howe,
Henry Allen Kelley,
Ezra Fletcher Taft,
Henry Lauriston Upham,
to be Instructors in Operative Dentistry, June 12, 1893.

William Parker Cooke, to be Instructor in Crown and Bridge Work, June 27, 1893.

Arthur Judson Oldham, to be Instructor in Mechanical Dentistry, June 27, 1893.

Fred Homer Woodcock, to be Instructor in Mechanical Dentistry, June 27, 1893.

Dwight Moses Clapp, to be Clinical Lecturer in Operative Dentistry, June 12, 1893.

William Henry Potter, to be Clinical Lecturer in Operative Dentistry, June 12, 1893.

Patrick William Moriarty, to be Demonstrator of Mechanical Dentistry, June 12, 1893.

Joseph Totten Paul, to be Demonstrator of Operative Dentistry, June 12, 1893.

NUMBER OF ORDINARY DEGREES IN 1893.

Bachelors of Arts of the Class of 1893	332
Bachelors of Arts out of course	17
Bachelors of Science	9
Bachelor of Agricultural Science	1
Bachelors of Divinity	3
Bachelor of Divinity and Masters of Arts	1
Bachelors of Laws	52
Bachelors of Laws out of course	4
Bachelors of Laws and Masters of Arts	17
Doctors of Medicine	70
Doctors of Medicine and Masters of Arts	6
Doctors of Dental Medicine	14
Doctor of Science	1
Doctors of Veterinary Medicine	4
Masters of Arts	66
Masters of Arts out of course	2
Doctors of Philosophy and Masters of Arts	12
Total	611

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TREASURER'S STATEMENT

SIGILLVM ACADEMIAE HARVARDIANAE IN NOV ANG
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1893

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College: —

The Treasurer of the College submits the Annual Statement of the financial affairs of the University, for the year ending July 31, 1893, in the usual form.

The Funds separately invested, with the income thereof, are as follows: —

	Principal. July 31, 1893.	Income.
UNIVERSITY.		
George B. Dorr Fund,		
University Houses and Lands, ...	$115,966.56	$5,786.73
Francis E. Parker Fund,		
University Houses and Lands, ...	113,817.44	5,679.49
John C. Gray Fund,		
University Houses and Lands, ...	25,000.00	1,247.50
Joseph Lee Fund,		
University Houses and Lands, ...	10,000.00	499.00
Insurance and Guaranty Fund,		
University Houses and Lands, ...	141,638.74	7,067.77
Stock Account (part of),		
University Houses and Lands, ...	17,149.95	1,149.17
John Cowdin Fund,		
Real Estate in Boston, ...	22,000.00	1,336.62
Walter Hastings Fund,		
Real Estate in Cambridge, ...	20,000.00	390.54
Edwin Conant Bequest (part of),		
60 shares Nat'l Webster Bank (sold during year),		120.00
10 " Blackstone Nat'l Bank, Uxbridge (sold during year), ...		20.00
48 shares Indian Orchard Mills, ...	1.00	
$1000 Midland R. R. of New Jersey 6's, ...	1,127.25	
COLLEGE.		
Stoughton Scholarship (part of),		
Real Estate in Dorchester, ...	1,294.30	
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England, ...	4,444.44	123.35
Jonathan Phillips' Gift,		
Mortgages, ...	10,000.00	500.00
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor, . . .	1,200.00	50.00
Scholarships of the **Class of 1856**,		
$10,000 Frem., Elkhorn & Mo. Valley R. R. 6's,	10,000.00	600.00
Amounts carried forward, . . .	$493,639.68	$24,570.17

Amounts brought forward, . .	$493,639.68	$24,570.17

LIBRARY.

Charles Minot Fund (part of),		
$60,000 Buffalo, Bradford, & Pittsb. R. R. 7's,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
Edwin Conant Fund (part of),		
Mortgage, ...	20,000.00	1,000.00

MEDICAL SCHOOL.

Henry Willard Williams Fund,		
100 shares State Street Exchange, ...	11,000.00	225.00
37 " American Bell Telephone Co., ...	7,400.00	222.00
22 " Calumet & Hecla Mining Co., ...	6,600.00	

MUSEUM OF COMPARATIVE ZOÖLOGY.

Agassiz Memorial Fund (part of),		
Advances for new building, &c., ...	22,248.83	1,115.68

SPECIAL FUNDS.

Bussey Trust,		
Real Estate, ...	413,092.80	20,919.54
Robert Troup Paine Fund (accumulating),		
$36,000 Massachusetts 5's, ...	40,676.25	1,739.17
Fund of the Class of 1834,		
Policy of Mass. Hospital Life Insurance Co., . .	1,000.00	40.00
Fund of the Class of 1853,		
Policy of Mass. Hospital Life Insurance Co., . .	3,625.00	145.00
George William Sawin Fund,		
14 shares Boston & Providence R. R., ...	3,568.50	120.00
Charles L. Hancock Bequest (part of),		
Mortgage, ...	34,697.00	2,628.82
Real Estate in Chelsea, ...	1,000.00	
Price Greenleaf Fund. The total amount of this Fund is $727,206.21, which is invested as follows: —		
$43,500 Consolidated R. R. of Vermont 5's, ...	38,280.00	2,175.00
12,200 Rutland R. R. 6's, ...	12,932.00	732.00
37,200 Rutland R. R. 5's, ...	34,968.00	1,860.00
1,000 Cheshire R. R. 6's, ...	1,110.00	60.00
46,500 Ogdens. & L. Champ. R. R. 6's, ...	46,500.00	2,790.00
28,800 Ogdens. & L. Champ. R. R. income 6's, . .	10,234.00	
3,000 Chicago, Burl. & Quincy R. R. 4's, ...	2,880.00	120.00
4,000 Chicago, Burl. & Northern R. R. 5's, . . .	4,000.00	200.00
23,000 Union Pacific Railway 6's, ...	25,990.00	1,380.00
290 shares Northern R. R. (N. H.), ...	29,290.00	1,740.00
800 " Rutland " preferred, ...	28,000.00	3,200.00
40 " Ogdens. & L. Champ. R. R., ...	680.00	
317 " Boston & Maine "	48,746.21	2,536.00
360 " Boston & Lowell R. R., ...	46,800.00	2,520.00
Amounts carried forward, . .	$1,453,958.27	$76,438.38

Amounts brought forward, . .	$1,453,953.27	$76,438.38
237 shares Fitchburg R. R. preferred, ...	22,395.33	948.00
355 " Old Colony "	63,190.00	2,692.08
142 " Chicago, Burl. & Quincy R. R., . . .	18,946.35	710.00
20 " N.Y. Central & Hudson River " . . .	2,260.00	100.00
292 " Michigan Central " . . .	28,032.00	1,606.00
122 " Union Pacific Railway, ...	7,161.40	
52 " West End Street Railway preferred, . .	4,330.00	208.00
$50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's, . .	49,750.00	2,500.00
25,000 New England " " " " 6's, ...	25,593.75	1,500.00
50,000 Chic. Junc. R'ys & Union Stock Yards 5's, .	47,000.00	2,500.00
50,000 General Electric Co. 5's	50,062.50	1,013.89
300 shares N. Y., N. Haven & Hart. R. R. (sold during year), ...		750.00
Lawrence Manufacturing Co.'s Note, ...	30,000.00	1,425.00
Merrimack " " "	20,000.00	450.00
Cocheco " " "	25,000.00	562.50
Massachusetts Cotton Mills' Note (paid during yr.),		125.00
Deposit with New England Trust Co., ...	3,074.67	242.30
Totals, ...	$1,850,749.27	$93,771.15

The other Funds are invested as a whole. The general investments are stated in detail on pages 30 and 31 of this report, but the usual summary statement of them, with the income thereof, is as follows: —

Investments.	Principal, August 1, 1892.	Principal, July 31, 1893.	Income.
Notes, Mortgages, &c., ...	$380,000.00	$758,000.00	$28,923.28
Railroad Bonds and Premiums, . .	2,152,158.62	2,194,987.29	93,777.73
Railroad Stock, ...	177,371.51	146,100.00	2,000.00
Sundry Bonds, ...	443,205.00	583,267.50	24,392.08
Manufacturing Stock, ...	38,122.29	37,322.29	4,220.00
Real Estate, ...	2,305,339.28	2,377,571.87	134,802.23
Brattle Street Reversion (1918), . .	1,000.00	1,000.00	
Advances to Botanical Dept.	7,250.85	12,357.58	362.54
" " Bussey Trust, ...	37,513.76	37,013.76	1,872.56
" " Dining Hall Association,	21,232.16	19,732.16	1,273.93
" " University Lands, . . .	30,000.00	30,000.00	1,500.00
" " Observatory, ...	4,248.27	5,290.83	212.41
" " Lawn Tennis Association,	200.00	50.00	6.50
" " Sch. of Veterinary Med.,	19,158.65	19,019.87	1,149.52
Baring Brothers & Company, . . .	1,122.55	1,282.88	36.98
Term Bills due in October, ...	142,429.47	156,273.78	
Term Bills overdue, ...	2,415.08	2,984.36	
Cash in Suffolk National Bank, . . .	22,323.61	19,329.62	
Cash in National Union Bank, . . .	194,594.21	131,057.15	4,789.27
Cash in hands of Bursar, ...	16,548.23	7,153.32	
Totals of general investments,	$5,996,233.54	$6,539,794.26	$299,319.03
Totals of special investments,	1,842,011.44	1,850,749.27	93,771.15
Amounts, . . .	$7,838,244.98	$8,390,543.53	$393,090.18

During the year $200,000 of General Electric bonds were bought, at prices much above the market price at the close of the year. In December, 1892, eleven hundred shares of New York, New Haven & Hartford R. R. stock were sold at high prices, and at a gain of $32,190.99 over their cost; of this sum $22,878.49 was credited to the account of Gains and Losses for General Investments, and $9312.50 to the Price Greenleaf Fund.

The Hayward Estate, on Washington St., has been improved at a cost, up to July 31, of $77,134.65. This sum includes the taxes for 1892, and interest at 5 per cent, on the cost of the estate, during the time of rebuilding. This interest has been credited to the income account, as income from real estate.

The account of Advances for Railroad Bond Premiums has been credited with the sum of $19,908.00 as the fair yearly repayment from income on account of premiums advanced; and the sum of $5879.60 has been credited to University Houses and and Lands as a repayment to capital from a wasting security.

The net income of the general investments ($299,319.03) has been divided at the rate of $4\frac{99}{100}$ per cent among the Funds to which they belong, after allowing to certain temporary Funds and balances a special rate of three per cent. The fraction, which was $478.82, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1891–92 shows a loss of sixteen one hundredths of one per cent.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on Funds for			
University Salaries and Expenses, ...		$39,970.69	
Library Salaries and Expenses (not books), . .		25,764.20	
College Salaries and Expenses, ...		39,208.65	
Gymnasium, and repairs on College buildings, .		none.	
College Term Bills, ...		306,442.52	
Sundry receipts, as follows: —			
Gifts for Salaries and Expenses, . .	$4,250.00		
Rents, ...	1,478.83		
Laboratory and other fees, ...	23,882.21		
Sales of catalogues, pamphlets, etc.,	2,518.95		
		32,129.99	
			$443,516.05

Total receipts, brought forward,		$443,516.05
Expended for		
University Salaries and Expenses,	$70,545.61	
Library Salaries and Expenses (not books),	33,384.82	
College Expenses,	87,161.67	
College Salaries, for instruction,	238,056.19	
Gymnasium and Athletic Building Expenses,	10,441.47	
Repairs, insurance and cleaning on College buildings not valued on Treasurer's books,	29,107.55	
		$468,697.31
Balance, showing deficit for the year, which has been charged to Stock Account,		$25,181.26

For the University, College, and Library accounts there has been a large increase of income from more tuition fees; but much heavier outlays for instruction and for other purposes, including the Chicago World's Fair exhibit, have caused a deficit of $25,181.26, in spite of the new unrestricted income from the George Draper Fund, and the use for current expenses of the whole income of the Stock Account. For 1891–92 the deficit was $6432.88.

For the Divinity School there has been a deficit of $2822.15, owing to increased expenses, chiefly for salaries and improvements, and in spite of more tuition fees. For 1891–92 there was a surplus of $368.74.

The Law School has had more tuition fees, and a much larger expenditure, chiefly for salaries and for books. The surplus for the year has been $13,818.56. For 1891–92 the surplus was $18,314.14.

The Medical School, with more tuition fees, and a much heavier outlay for salaries and other purposes, has had a surplus of $3185.83. For 1891–92 the surplus was $22,446.43.

For the Dental School, with less tuition fees, there has been a surplus of $2119.47. For 1891–92 the surplus was $2864.85.

The Lawrence Scientific School has had a deficit of $929.20, much heavier outlays for salaries, apparatus, and scholarships having been only partly met by more tuition fees and gifts for immediate use. For 1891–92 there was a surplus of $1498.72.

The Museum of Comparative Zoölogy has spent all the income of its restricted Funds as required by the conditions of gift, and has used the surplus income of the Agassiz Memorial Fund as heretofore to pay interest upon, and to repay in part, the principal of the advances from the Memorial Fund, which were used to extend the Museum building and to buy fossils.

For the general account of the Observatory there has been a deficit of $1042.56, owing to the loss of income from Time Signals, and in spite of increased income from the Paine Fund, and reduction of expenses. For 1891–92 the deficit was $571.96. Large outlays have been made from the capital as well as the income of the Boyden Fund, for the expedition to Peru. Mr. Boyden's will permits the expenditure of capital; but it is understood that part of the income will at some future time be accumulated. Nearly all the large gifts from Mrs. Draper, for current use, have been spent during the year upon the special research work of the Draper Memorial.

The Bussey Institution, with more income from the Bussey Trust and less from tuition fees, has made its usual expenditure and had a surplus of $383.72. For 1891–92 the surplus was $875.96.

The Veterinary School has had more income from tuition fees and from its Hospital and Forge, but it is still unable to provide for its necessary expenditure. It has had a nominal surplus of $138.78, but if it had paid in full its bills for the year the account would have shown a deficit. For 1891–92 the deficit was $2639.71.

Gifts have been received during the year as follows: —

GIFTS TO FORM NEW FUNDS OR INCREASE OLD ONES.

From the estate of George Draper, securities and cash amounting to $48,458.50, as his unrestricted bequest of one third of the residue of his estate.

From Edward Russell, $200, to increase the Scholarship founded by him.

From Theodore K. Gibbs, $5000, to establish the "Virginia Barret Gibbs Scholarship Fund" in connection with the Museum of Comparative Zoölogy.

From Mrs. Anne M. Sweetser, $6000, to found the Isaac Sweetser Scholarship for needy and meritorious students at the Medical School.

From George A. Gardner, $5000, as part of a permanent Fund, the income of which shall be used to provide photographs and photographic slides for the department of Geology.

From the estate of Francis Sales, $9833.34, his residuary bequest; one half for the foundation of one or more scholarships; $1000 to establish an annual prize for "the best scholar in Spanish who shall have commenced the study of that language at Harvard College, and whose scholarship shall be determined by his proficiency in Spanish composition"; the remainder to establish a Fund for "the purchase of books in the Spanish language, or of books illustrative of Spanish history and literature."

From the estate of Frederick Frothingham, his bequest of $30,000 with accrued interest amounting to $1325, to found the Frothingham Professorship in the Divinity School.

From Miss Georgiana W. Sargent, $2000, for the permanent endowment of the prize established by her father, John Osborne Sargent, of the Class of 1830.

From the estate of Cyrus M. Warren, $4850 with accrued income amounting to $550, the proceeds of his bequest for "the promotion of chemical research or the advancement of chemical science," after deducting the New York collateral inheritance tax.

Additional subscriptions to raise the standard of medical education, paid to August 1, 1893, from

Frederick L. Ames	$1000	John E. Thayer	$500
William Endicott, Jr.	1000	Nathaniel Thayer	1000
Augustus Hemenway	500	Estate of Miss Anne Wigglesworth	500
H. H. Hunnewell	1000		
E. V. R. Thayer	500		$6000

From T. O. Loveland, $50, to be added to the Dental School Endowment.

From Waldo Higginson, $500, to be added to the George B. Sohier Prize Fund.

From Henry Saltonstall, $3000, to be added to the Dorothy Saltonstall Scholarship Fund on condition that the name of that Fund shall be changed to Saltonstall Scholarship Fund.

From the estate of Orlando W. Doe, $5000, the income to be used, one half for a scholarship in the Academic department and one half for a scholarship in the Medical department.

From the estate of Mrs. Louisa J. Hall, $500, her unrestricted bequest to the Divinity School.

From the estate of Robert Treat Paine, $153,447.51, the final payment on account of his residuary bequest for the Observatory.

From Miss Anna C. Lowell, $1000 additional, for the Lowell Fund for a Botanic Garden.

From Henry Willard Williams, securities valued at $25,000, to found the Henry Willard Williams Professorship of Ophthalmology.

From James Gordon Bennett, $1000, to establish a prize for "the best essay in English prose upon some subject of American governmental domestic or foreign policy of contemporaneous interest."

From the estate of Daniel Treadwell, $353.09 additional, the final payment on account of Professor Treadwell's residuary bequest for the use of the College Library.

Through Henry M. Spelman, additional subscriptions amounting to $622, to be added to the George William Sawin Fund.

From the estate of Claudius M. Jones, $6000, to found a scholarship "in any department of the University at the option of the faculty."

The total amount of these gifts for capital account is $315,689.44, as is also stated on page 24 of this report.

GIFTS FOR IMMEDIATE USE.

From the estate of Mrs. Elizabeth Fogg, $10,374.25, the final payment on account of her bequests of $220,000 for building and maintaining the "William Hayes Fogg Art Museum of Harvard College," after deducting the New York collateral inheritance tax on these bequests and on her collection of paintings and artistic objects given to the College.

From Mrs. Henry Draper, of New York, an additional sum of $9999.96, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stella spectra, with which the late Dr. Henry Draper's name is honorably associated.

From Walter Hunnewell, $250, for printing and other expenses in the Botanic department.

Additional subscriptions towards the construction of a fire-proof building for the storage of valuable manuscripts and photographic plates at the Observatory, paid to August 1, 1893, from

Oakes A. Ames	$100	David P. Kimball	$200
John L. Bremer	200	John Lowell	100
Charles P. Curtis	100	Nathaniel C. Nash	100
J. Rayner Edmands	200	F. H. Peabody	500
William Endicott, Jr.	500	Oliver W. Peabody	100
A friend	500	George O. Shattuck	100
Augustus Hemenway	100	J. W. Wheelwright	100
Mrs. Mary Hemenway	500	Henry W. Williams	100
			$3500

From Edward Cummings, $20, for the library of books on Social Questions.

From the Class of 1879, an additional gift of $40, to be used under the direction of Professor Taussig for the Political Economy reading-room.

Additional subscriptions for illustrated lectures in the Latin and Greek departments paid to August 1, 1893, from

Louis A. Biddle	$10	Clarence B. Moore	$20
Charles J. Bonaparte	50	George Austin Morrison, Jr.	10
Herbert Clark	10	Grenville H. Norcross	25
Morris Earle	5	Otis Norcross	25
William S. Ellis	10	Francis Rawle	10
George H. Fisher	10	Joseph Sargent	50
Theodore Frothingham	25	John Stewardson	10
Mitchell Harrison	20	Nathaniel Thayer	100
Amory A. Lawrence	100	H. Ivah Thomsen	5
Arthur H. Lea	10	Charlemagne Tower	10
Thornton K. Lothrop	100	Mrs. J. Huntington Wolcott	100
James T. Mitchell	10	Roger Wolcott	100
			$825

From William A. Slater, $1000, towards the salary of the Professor of Experimental Psychology.

From Moorfield Storey and James J. Putnam, $1250, from the income of a trust fund held by them, towards the salary of the Associate Professor of Physiology at the Medical School.

From Nathaniel C. Nash, $250, to be spent by Professor John Williams White in such manner as he shall think will best advance the interests of the Greek department.

From Mrs. John L. Gardner, $25, and from Stephen Salisbury, $100, towards the cost of additional exhibition cases for the Semitic Museum.

From William G. Farlow, his annual gift of $450, towards the salary of the Assistant in the Cryptogamic Herbarium.

From John L. Gardner, 2d, $100, to be used in developing and finishing photographic plates brought by Professor Goodale from Australasia.

Through James S. Russell, anonymous gifts amounting to $595, "to be used in equipping a library for the use of the Historical department."

From the estate of Edwin Conant, additional securities and cash amounting to $1729.05, on account of his residuary bequest for Conant Hall.

From an anonymous friend his annual gift of $500, to increase the salary of the Professor of Entomology.

From John Lowell, on behalf of himself and Mrs. Lowell, $400, the eighth yearly payment for the support of two Scholarships to be known as the George Emerson Lowell Scholarships.

From Jacob H. Schiff, $500, to be expended for books for the Semitic Reference Library, at the discretion of Professors Toy and Lyon.

From Andrew P. Peabody, $200, for the Semitic department, to be used at the discretion of Professors Toy and Lyon.

From Alfred T. White, $250, to "promote within the College the study of the problems of the day in social and political economy."

Subscriptions for a new building for the Dental School, paid to August 1, 1893, from

C. W. Amory	$300
A friend, through Dr. C. . .	1000
A friend, through Dr. Clapp	25
Daniel S. Ford	500
Henry Lee	1000
Arthur T. Lyman	500
William G. Means	100
F. H. Peabody	$200
Henry L. Pierce	1000
Frederick C. Shattuck . . .	50
A. Shuman & Co.	500
George Thacher	100
W. A. Tower	250
Mrs. W. W. Warren	500
	$6025

Through D. G. Lyon, $50, given by Alexander Strauss and others to increase the salary of G. A. Reisner in the Semitic department.

From Alfred T. White, $15, for the Library Duplicate account.

From Robert N. Toppan, an additional gift of $150, for a prize in Political Science.

From the Dante Society, an additional sum of $50, for the purchase of books for the Dante Collection.

From Mrs. C. M. Barnard, $600, her tenth yearly payment for the Warren H. Cudworth Scholarships.

From R. H. Fitz, $71.25, for a microscope for the use of the department of the Theory and Practice of Physic at the Medical School.

From Miss Lucy Ellis, $2000, for assistance in the departments of Physiology and Pathological Bacteriology at the Medical School.

Subscriptions for the erection and endowment of "Phillips Brooks House" paid to August 1, 1893, from

Alanson J. Abbe, ...	$10.00
Charles F. Aiken	5.00
George H. H. Allen . . .	10.00
Anonymous	100.00
Anonymous	10.00
Alfred C. Arnold	15.00
William B. Bacon	50.00
Edward L. Baker	15.00
Charles B. Barnes, Jr. . .	10.00
Jonathan W. Bemis . . .	100.00
George N. Black	300.00
Mrs. George Baty Blake .	50.00
William P. Blake	100.00
Miss Harriett A. Blogg . .	$1.00
G. C. Brackett	25.00
Jeffrey R. Brackett . . .	25.00
Caleb D. Bradlee	50.00
Edward T. Brewster . . .	5.00
Shepherd Brooks	500.00
Henry W. Broughton . . .	5.00
Reynolds D. Brown . . .	5.00
H. W. Bryant	10.00
F. W. Burlingham	5.00
Charles W. Burr	5.00
James Byrne	10.00
Charles J. Capen	5.00

D. L. F. Chase	$5.00
Alfred G. Church	10.00
Charles W. Clifford	25.00
K. B. Conger	5.00
Isaac Cook, Jr.	50.00
Henry H. Crapo	10.00
George G. Crocker	50.00
Mrs. A. P. Gordon Cumming	10.00
Edward Curtis	25.00
Francis G. Curtis	25.00
George E. Dadmun	10.00
Franklin A. Dakin	1.00
John Davis	5.00
J. C. Bancroft Davis	25.00
Francis P. Denny	25.00
S. C. Donaldson	5.00
Russell Duane	10.00
C. C. Everett	200.00
Edward T. Fisher	5.00
A. S. Flint	10.00
Jonathan French	500.00
Friends, through George P. Huntington	2.00
Francis B. Greene	50.00
Charles S. Hamlin	10.00
Franklin T. Hammond	5.00
E. A. Harriman	20.00
John K. Hastings	13.26
Brooke Herford	25.00
T. W. Higginson	10.00
S. H. Hilliard	5.00
E. R. Hoar	102.00
A. W. Hodgman	2.00
William L. Humason	10.00
Charles A. Humphreys	1.00
Charles L. Hutchinson	50.00
Frank Irwin	5.00
Everett Starr Jones	10.00
George G. Kennedy	300.00
Alfred C. Lane	10.00
Jonathan A. Lane	25.00
Henry Lee	1000.00
Otis L. Leonard	2.00
Roland C. Lincoln	25.00
E. S. Litchfield	20.00
Herbert W. Lloyd	$25.00
Augustus M. Lord	5.00
Francis W. Loring	25.00
S. F. McCleary	10.00
W. T. McM. S.	5.00
Maurice W. Mather	10.00
George H. Mifflin	25.00
H. E. Miles	2.00
R. B. Montgomery	5.00
Franklin W. Moulton	10.00
Calvin G. Page	10.00
J. D. Pennock	10.00
Osgood Putnam	5.00
Milton Reed	50.00
William Reed, Jr.	20.00
Edmund Rodman	10.00
James S. Rogers	10.00
Edmund S. Rousmaniere	15.00
Henry M. Saville	2.50
Theodore Sedgwick	15.00
Charles C. Shippen	100.00
Miss A. May Smith	1.00
Ormond G. Smith	25.00
Henry H. Sprague	20.00
William S. Stearns	100.00
Roderick Stebbins	10.00
I. N. Phelps Stokes	100.00
Mrs. I. N. Phelps Stokes	250.00
Mrs. W. B. Storer	25.00
Charles H. Taylor, Jr.	25.00
Francis W. Vaughan	25.00
Henshaw B. Walley	10.00
Andrew H. Ward, Jr.	1.00
Frank B. Washburn	5.00
R. M. Washburn	2.50
Charles Wheeler	25.00
Josiah Wheelwright	200.00
Alfred T. White	200.00
F. Winthrop White	25.00
McDonald E. White	10.00
George Wigglesworth,	300.00
Henry Williams	5.00
John D. Williams	100.00
Joseph R. Worcester	10.00
	$5983.26

Additional subscriptions from graduates of the Dental School, to be applied towards the immediate wants of the School, paid to August 1, 1893, from

Charles H. Abbot	$25
C. A. Brackett	25
Thomas Fillebrown	20
P. B. Laskey	5
Frank Perrin	$10
William H. Potter	5
James Shepherd	5
	$95

Additional subscriptions for the present use of the Herbarium, paid to August 1, 1893, from

Frederick L. Ames	$500
B. P. Cheney	500
A friend	500
H. H. Hunnewell	500
Nathaniel T. Kidder	500
Henry Lee	$500
Augustus Lowell	250
Nathaniel C. Nash	250
F. H. Peabody	50
	$3550

Gifts for present use at the Lawrence Scientific School, from

Albert A. Pope	$250
A friend, through Professor Shaler	250
A friend, through Professor Shaler	$500
	$1000

Subscriptions for the Arnold Arboretum, paid to August 1, 1893, from

F. L. Ames	$8333.33
John L. Gardner	$2000.00

From an anonymous friend, $500, for present use.

Through H. K. Schilling, $165.25, for the German department.

Through Louis D. Brandeis, the fourth annual gift of $1000, from an anonymous friend of the Law School, to defray the expenses of the course on the Peculiarities of Massachusetts Law and Practice for the year 1893–94.

Through F. C. de Sumichrast, $120.25, for the French department.

From George W. Wales, $200, for books for the Library, in continuance of former gifts for the same purpose.

From the estate of Mrs. Catharine Page Perkins, $150,000, the amount of her bequest for erecting upon College grounds a dormitory to be known as "Perkins Hall," in memory of her husband's great grandfather, Rev. Daniel Perkins, his grandfather, Dr. Richard Perkins, and his brother, William Foster Perkins, who were graduates of Harvard College.

From J. L. Hildreth, $50, for providing additional stack room for books.

From Augustus Hemenway, $50, for the present use of the Veterinary School.

From Mrs. Benjamin S. Rotch, $1000, towards establishing a department of Architecture at the Lawrence Scientific School for 1893–94.

From Charles Sprague Sargent, $5453.17, which has been expended for books for the Arnold Arboretum, in addition to his gift to the Arboretum, previously made, of his library, containing about four thousand bound volumes and several thousand unbound pamphlets, devoted to Botany, Dendrology, Forestry, Horticulture, Geography, and related subjects.

Through Moses Williams, Treasurer, subscriptions for providing additional stack room for books, paid to August 1, 1893, from

B. F. D. Adams	$25.00
R. M. Allen	15.00
Alumnus	50.00
F. P. Appleton	10.00
Nathan Appleton	10.00
William C. Appleton	5.00
Harrison O. Apthorp	50.00
James B. Ayer	20.00
James W. Babcock	5.00
Henry Bailey	5.00
Waldron Bates	10.00
J. W. Bemis	100.00
James T. Bixby	5.00
Charles J. Bonaparte	100.00
Vincent Y. Bowditch	5.00
Jeffrey R. Brackett	25.00
C. D. Bradlee	25.00
R. M. Bradley	10.00
Frank Brewster	5.00
L. B. R. Briggs	25.00
Frederick Brooks	20.00
Phillips Brooks	100.00
Shepherd Brooks	200.00
William H. Brune	10.00
Howard M. Buck	25.00
E. Buckingham	10.00
I. Tucker Burr, Jr.	25.00
Prescott Hall Butler	100.00
James Byrne	10.00
G. R. Carpenter	5.00
James R. Carret	5.00
Cash	10.00
"	1.00
Cash, Keene, N. H.	$10.00
" Students	1798.35
F. W. Chapin	10.00
H. W. Chaplin	5.00
Elihu Chauncey	5.00
Paul H. Cheney	50.00
F. C. Clarke	20.00
W. B. S. Clymer	50.00
William C. Collier	10.00
J. Randolph Coolidge	1000.00
Henry H. Crapo	10.00
George G. Crocker	50.00
Samuel B. Cruft	50.00
Guy Cunningham	5.00
Edward Curtis	25.00
Charles Cushman	15.00
Asa Dalton	5.00
Edith L. Dana	25.00
I. P. Dana	5.00
F. A. Delano	30.00
Arthur B. Denny	25.00
William S. Dexter	100.00
E. B. Drew	50.00
Francis O. Dow	10.00
Edmund Dwight	100.00
Irving Elting	5.00
C. S. Fairchild	50.00
William Farnsworth	20.00
Gorham P. Faucon	3.00
Lyman B. Fisk	25.00
Arthur Foote	10.00
C. H. W. Foster	25.00
F. C. Foster	100.00

Richard P. Francis	$5.00
Thomas French, Jr.	25.00
O. B. Frothingham	50.00
J. B. Galloway	30.00
John Brown Gerrish	25.00
W. W. Goodwin	25.00
W. H. Gove	10.00
Russell Gray	100.00
George W. Green	10.00
S. A. Green	25.00
F. T. Greenhalge	20.00
Leon S. Griswold	10.00
Elisha Gunn, Jr.	50.00
Edward Hale	25.00
George S. Hale	10.00
W. G. Hale	5.00
Edward H. Hall	25.00
Charles S. Hanks	25.00
Henry W. Hardon	10.00
J. B. Hardon	50.00
Henry W. Haynes	25.00
Daniel L. Hazard,	20.00
G. E. Head	20.00
John H. Heywood	10.00
Thomas Hill	5.00
James J. Higginson	50.00
T. W. Higginson	10.00
Waldo Higginson	10.00
George Hill	10.00
Charles F. Hinckle	20.00
John Holmes	5.00
Nathaniel Holmes	50.00
Wesley O. Holway	5.00
Walter Hunnewell	50.00
G. W. Huse	10.00
Harvard Club of San Francisco	110.60
F. G. Ireland	25.00
Oscar R. Jackson	10.00
C. M. Jones	20.00
Francis B. Keene	25.00
F. Kidder	25.00
R. Kidner	5.00
Henry S. Kilby	2.00
Robson S. Ladd	10.00
Edward B. Lane	3.00
William Lawrence	20.00
George Winthrop Lee	5.00
F. J. Le Moyne	25.00
Otis L. Leonard	5.00
W. A. Locke	5.00
Charles A. Loeser	$50.00
Samuel Longfellow	50.00
C. W. Loring	15.00
John A. Loring	10.00
William Caleb Loring	50.00
Charles E. Loud	10.00
Edward J. Lowell	25.00
James Russell Lowell	100.00
Frank Lyman	100.00
L. B. McCagg	1000.00
S. F. McCleary	5.00
Alexander McKenzie	10.00
Haslett McKim, Jr.	50.00
Francis P. Magoun	10.00
Kinsley Magoun	10.00
A. G. Mason	10.00
Charles J. Mason	2.00
Julian A. Mead	10.00
Moses Merrill	5.00
William Minot	50.00
A. G. Morris	50.00
Charles W. Munroe	10.00
James A. Noyes	25.00
William Noyes	5.00
F. K. Olmsted	10.00
T. M. Osborne, for Class of 1884	553.00
Calvin G. Page,	10.00
Herman Page	2.00
John C. Palfrey	25.00
F. Parkman	20.00
F. C. Parmenter	5.00
Charles W. Parsons	20.00
George Peabody	100.00
Robert S. Peabody	50.00
Augustus T. Perkins	25.00
Edward C. Perkins	10.00
J. B. Poole	10.00
Arthur Reed	10.00
Milton Reed	25.00
Edw. A. Renoux	10.00
William F. Richards	10.00
W. W. Richards	25.00
A. C. Richardson	10.00
W. L. Richardson	50.00
A. L. Rives	25.00
John C. Ropes	100.00
W. L. Ropes	5.00
E. S. Rousmaniere	5.00
William G. Russell	50.00
Stephen Salisbury	500.00

Edward T. Sanford	$10.00
William Cary Sanger	100.00
Edwin L. Sargent	20.00
James Schouler	100.00
Arthur Searle	10.00
F. C. Shattuck	50.00
George O. Shattuck	25.00
Robert G. Shaw	50.00
Edward E. Simmons	10.00
Charles C. Smith	25.00
Henry St. John Smith	50.00
Jeremiah Smith	100.00
W. A. Spinney	2.00
E. C. Sprague	10.00
Charles F. Squibb	50.00
Edward H. Squibb	50.00
Master of St. John's College, Cambridge, Eng.	25.30
Francis H. Storer	50.00
Walter R. Storer	10.00
Francis J. Swayze	50.00
Kenneth M. Taylor	25.00
John S. Tebbets	5.00
F. W. Thayer	5.00
J. B. Thayer	30.00
John E. Thayer	1000.00
J. Henry Thayer	25.00
Wm. Henry Thayer	30.00
Sir Edward Thornton,	25.00
Benj. H. Ticknor	10.00
W. H. Tillinghast	10.00
Robert N. Toppan	100.00
C. H. Toy	10.00
E. M. Tucke	50.00

F. W. Vaughan	$50.00
G. L. Walton	10.00
C. P. Ware	15.00
T. K. Ware	50.00
William R. Ware	50.00
Edw. R. Warren	25.00
F. S. Watson	10.00
A. Davis Weld	100.00
Moses W. Weld	100.00
Everett Jansen Wendell	20.00
John S. White	10.00
M. P. White	100.00
W. A. White	50.00
John E. Whiting	25.00
Charles B. Wilby	10.00
Henry M. Williams	10.00
Henry W. Williams	20.00
John D. Williams	50.00
Joseph H. Williams	100.00
Augustus E. Willson	5.00
Edmund R. Willson	10.00
J. F. Winslow	10.00
Granville L. Winthrop	100.00
Robert D. Winthrop	100.00
Edward S. Wood	25.00
Charles P. Worcester	30.00
William Worthington	50.00
M. St. C. Wright	10.00
Theodore F. Wright	20.00
	$12,472.25
Interest received with this subscription less expenses	$1,104.64
	$13,576.89

From George W. Hammond, $300, for present use by the Botanic Garden.

From Henry C. Warren, $750 additional, "to be applied at the discretion of Professor C. R. Lanman to the printing of Hindoo texts and of translations from the same, and to the purchase of Hindoo manuscripts," for the Sanskrit department.

The total amount of these gifts for immediate use is $235,446.66, as is also stated on page 24 of this report.

The estate, No. 16 Quincy Street, Cambridge, containing about eleven thousand feet of land, with the dwelling house thereon, was given to the College within the year by Henry C. Warren. This estate does not belong to the account called University Houses and Lands, and has not yet any valuation in the College books of account.

EDWARD W. HOOPER, *Treasurer.*

BOSTON, December 18, 1893.

General Statement of Receipts and Disbursements for the year ending

INCOME

Interest on notes, mortgages, and advances, ...		$43,163.63
" " Massachusetts 5's, ...		1,739.17
" " Policies Mass. Hospital Life Insurance Co., ...		385.00
" " Deposit with New England Trust Co., ...		259.58
" " Metropolitan Telephone & Telegraph Co. 5's, ...		7,500.00
" " Chicago Junc. Railways & Union Stock Yards Co. 5's, .		10,000.00
" " Deposit with National Union Bank, ...		4,789.27
" " New England Telephone & Telegraph Co. 6's, ...		7,500.00
" " General Electric Co, 5's, ...		6,905.97
" " Railroad Bonds (after deducting $19,908.00 for sinking premiums).		
Buffalo, Bradford & Pittsburg 7's, . .	$4,200.00	
Burlington & Mo. River in Neb. 6's, .	17,179.67	
Fort Scott, So. E. & Memphis 7's, . .	6,966.00	
Eastern Railroad sterling 6's, ...	5,742.56	
Fremont, Elkhorn & Mo. Valley 6's, .	600.00	
Chicago, Burlington & Quincy 4's, . .	120.00	
Eastern Railroad 6's, ...	18,490.00	
Consolidated R. R. of Vermont 5's, .	2,175.00	
Rutland Railroad 6's, ...	732.00	
Rutland Railroad 5's, ...	1,860.00	
Cheshire Railroad 6's, ...	60.00	
Union Pacific 6's, ...	1,380.00	
Ogdens. & Lake Champlain 6's, . . .	2,790.00	
Chicago, Burlington & Northern 5's, .	200.00	
Chicago, Burlington & Quincy 7's, . .	20,491.00	
Union Pacific R'y Omaha Bridge 5's, .	8,555.00	
Chicago, Burlington & Quincy conv. 5's,	4,200.00	
Chicago & No. W., Madison Exten. 7's,	5,810.00	
Minneapolis Union 5's, ...	4,866.00	
Great Northern Coll. Trust 4's, . . .	1,977.50	107,894.73
Dividends on Stocks.		
Amoskeag Manufacturing Co., . . .	1,200.00	
Merrimack " " . . .	1,020.00	
Pacific Mills, ...	2,000.00	4,220.00
Chicago, Burlington & Quincy R. R., .	710.00	
Rutland R. R., preferred, ...	3,200.00	
Boston & Maine R. R., ...	2,536.00	
Old Colony R. R., ...	2,692.08	
New York Cent. & Hud. River R. R.,	100.00	
Michigan Central R. R., ...	1,606.00	
Boston & Lowell R. R., ...	2,520.00	
Northern R. R. (N. H.), ...	1,740.00	
West End Street Railway, preferred, .	208.00	
Fitchburg R. R., preferred, ...	948.00	
Amounts carried forward, . . .	$16,260.08	$194,357.35

by the Treasurer of Harvard College,
July 31, 1893.

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 50).		
Fellowships and Scholarships,	$15,215.25	
Prizes,	700.00	
Salaries and other expenses,	67,595.61	
Sundry payments from special Funds,	3,689.45	$87,200.31
College, as per Table II. (page 53).		
Salaries for instruction,	238,056.19	
Repairs, insurance, and cleaning on College Edifices, not valued on Treasurer's books,	29,107.55	
General expenses,	50,343.36	
Scholarships,	31,145.81	
Beneficiaries,	19,968.14	
Prizes,	1,067.50	
Botanic Garden and Botanic Museum,	11,829.53	
Herbarium,	6,322.15	
Hemenway Gymnasium,	9,304.26	
Carey Athletic Building,	1,137.21	
Jefferson Physical Laboratory,	3,621.49	
Books for special departments,	1,152.04	
Apparatus, &c., from special gifts,	2,083.38	
Printing, from Publication Funds,	1,077.89	
Summer Schools,	10,582.36	
Appleton Chapel,	7,833.60	
Appropriations for collect'ns and laboratories,	18,402.35	443,034.81
Library, as per Table III. (page 61).		
Books,	16,902.05	
Salaries and other expenses,	33,384.82	50,286.87
Divinity School, as per Table IV. (page 63).		
Salaries and other expenses,	29,613.58	
Scholarships and Beneficiaries,	2,236.47	31,850.05
Law School, as per Table V. (page 65).		
Salaries and other expenses,		61,671.69
Medical School, as per Table VI. (page 65).		
Salaries, laboratory expenses, &c.,	78,542.53	
Scholarships and Beneficiaries,	2,562.50	
Fees repaid to Instructors,	3,735.00	
Boylston Medical Prizes,	250.00	
Warren Anatomical Museum,	825.72	
Sundry payments from special Funds,	1,967.30	
General expenses,	18,578.56	106,461.61
Amount carried forward,		$780,505.34

General Statement of Receipts and Disbursements for the year ending

INCOME (*continued*).

Amounts brought forward, . . .			$16,260.08	$194,357.35
Dividends on Stocks (*continued*).				
N. Y., New Haven & Hartford R. R., .			2,750.00	
Boston & Providence R. R., ...			120.00	19,130.08
State Street Exchange, ...			225.00	
American Bell Telephone Co., ...			222.00	447.00
National Webster Bank, ...			120.00	
Blackstone National Bank, Uxbridge, .			20.00	140.00
Real Estate, from rents, &c., net receipts.				
Cambridge (University Houses and Lands) gross receipts,		$38,926.62		
Less Taxes, ...	$1,732.80			
Repairs, improvements, care, &c. .	9,884.56			
Repaid to capital, .	5,879.60	17,496.96	21,429.66	
Boston (general investments).				
Gross receipts, ...		172,182.79		
Less Taxes, ...	23,955.30			
Insurance, ...	715.91			
Repairs, improvements, care, &c., .	4,771.21			
Repaid to capital, .	7,938.14	37,380.56	134,802.23	
Bussey real estate.				
Gross receipts, ...		40,787.93		
Less Taxes, ...	8,042.59			
Insurance, ...	56.75			
Interest, ...	1,872.56			
Repairs, improvements, care, &c.. .	4,238.98			
Heat and power, . .	5,657.51	19,868.39	20,919.54	
Sundry estates.				
Gross receipts, ...		7,186.53		
Less Taxes, ...	750.68			
Insurance, ...	210.00			
Repairs, ...	1,540.86	2,501.54	4,684.99	
Net income from Real Estate, ...				181,836.42
Term Bills.				
College, as per Table II., ...			306,442.52	
Divinity School, as per Table IV., ...			6,009.68	
Law School, as per Table V., ...			57,950.00	
Medical School, as per Table VI., ...			90,408.52	
Dental School, as per Table VII., ...			7,350.00	
Lawrence Scientific School, as per Table VIII., .			27,780 00	
Bussey Institution, as per Table XI., ...			310.00	
School of Veterinary Medicine, as per Table XII.,			4,378.27	500,628.99
Amount carried forward, ...				$896,539.84

EXPENSES (*continued*).

Amount brought forward, ...		$780,505.34
Dental School, as per Table VII. (page 67).		
Salaries and other expenses, ...		12,277.11
Lawrence Scientific School, as per Table VIII. (page 68).		
Salaries and other expenses, ...		40,459.35
Museum of Comparative Zoölogy, as per Table IX. (page 69).		
Paid from sundry Funds on the order of the Faculty, ...	$24,240.99	
Sturgis Hooper Fund, Professor of Geology,	5,150.00	29,390.99
Observatory, as per Table X. (page 70), ...		69,011.18
Bussey Institution, as per Table XI. (page 71),	12,600.65	
Arnold Arboretum, as per Table XI. (page 71),	21,819.58	34,420.23
School of Veter'y Medicine, as per Table XII. (page 72),		24,773.46
Annuities.		
Bussey, ...	6,000.00	
Gore, ...	300.00	
Lucy Osgood, ...	420.00	
Gurney, ...	1,000.00	
George William Sawin, ...	120.00	
Henry Willard Williams, ...	447.00	8,287.00
Class Funds.		
Paid the Secretary of the **Class of 1834**, . . .	40.00	
" " " " **1853**, . . .	145.00	185.00
Sundry payments from income.		
From **Gray** Fund for Engravings, to the Treasurer of the Museum of Fine Arts, ...	423.85	
From **Daniel Williams** Fund for the benefit of the Herring Pond and Mashpee Indians, . . .	845.99	
From **Sarah Winslow** Fund, to the Minister and Teacher at Tyngsborough, Mass., ...	241.62	
From **Huntington Frothingham Wolcott** Fund, to the Treasurer of the Peabody Museum of American Archaeology and Ethnology, . . .	82.67	
From **John Witt Randall** Fund, expenses on account of the **Randall** collection, ...	1,487.09	
From **Charles L. Hancock** Bequest, legal services and sundry expenses, ...	3,775.65	
Certified copy of **Benjamin Bussey's** will, . .	2.00	6,858.87
Total amount of expenses carried forward, ...		$1,006,168.58

General Statement of Receipts and Disbursements for the year ending

INCOME (*continued*).

Amount brought forward, ...			$896,539.84
Sundries.			
William Pennoyer Annuity, ...		$123.35	
Asa Gray's copyrights, ...		3,074.65	
Trustee of **Thayer** Scholarships, ...		2,800.00	
Matthews Scholarships (½ net rents of Hall), . .		5,412.86	
Trustees of **Edward Hopkins**, ...		225.94	
Use of Library by resident graduates and others,		85.00	
Sale of grass, wood, old material, etc., ...		3,860.22	
" " old examination papers, ...		125.65	
" " time signals from Observatory, ...		109.46	
" " tickets to Commencement Dinner, . . .		564.00	
" " books, pamphlets, catalogues, &c., . . .		1,945.04	
Board of horses, cattle, &c. at Bussey Institution,		1,807.41	
Repayment of advances for microscopes, ...		655.00	
Repayment of advances for publishing observa'ns,		500.00	
Unexpended appropriation returned		165.00	
Laboratory instruction to Dental and Veterinary students, ...		642.00	
Use of lockers at Gymnasium and Athletic Build'g,		8,056.00	
Fees for admission examinations, &c., ...		1,287.00	
Fees in Infirmary and Laboratory, Dental School,		5,857.37	
Fees from Veterinary Hospital and Forge, . . .		13,996.69	
Subscribers to Veterinary Hospital		1,470.00	
Fees for Summer Courses, ...	$7,607.50		
Other receipts from Summer Courses,	84.36	7,691.86	
College Lib'y for cataloguing for Divinity School,		181.29	
Laboratory fees: Chemistry	6,946.10		
Physics	2,480.00		
Natural History . .	2,163.75		
Philosophy	172.50	11,762.35	72,398.14
Sundry gifts for immediate use, see page 18, ...			235,446.66
Total amount of income, ...			$1,204,384.64

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

Edward Russell Scholarship (additional), . .		$200.00	
Lowell Fund for a Botanic Garden (additional),		1,000.00	
Medical School Subscription Fund	"	6,000.00	
Daniel Treadwell Fund	"	353,09	
George B. Sohier Fund	"	500.00	
John O. Sargent Prize Fund	"	2,000.00	
Saltonstall Scholarship Fund	"	3,000.00	
Amounts carried forward, . . .		$13,053.09	$1,204,384.64

by the Treasurer of Harvard College,
July 31, 1893.

Amount brought forward, ... $1,006,168.58

INVESTMENTS AND SUNDRY PAYMENTS.

Burl. & Mo. R. (Neb.) R.R. non-ex. 6's,	$17,000.00 cost	$17,680.00	
General Electric Co. 5's, ...	200,000.00 "	190,125.00	
Massachusetts 5's, 1894 (**Robert Troup Paine** Fund), ...	1,000.00 "	1,021.25	
Paid for accrued interest and expenses on the above bonds, ...	3,188.86		
Expenses on bonds bought last year,	22.50	3,211.36	
Chic. Burl. & Quincy R. R. 7's, . . .	50,000 cost,	58,575.00	
1000 shares N. Y. Cent. & H. R. R. R.,	"	101,100.00	
500 " Chic. Burl. & Quincy R.R.,	"	45,000.00	
2 " Boston & Prov. R. R., . .	"	500.50	417,213.11
Property received as part of **George Draper's**, unrestricted bequest of one third of the residue of his estate.			
$5,000 Boston Water Loan 5's, ...		5,866.67	
5,000 Chicago Water Loan 7's, ...		5,392.64	
5,000 Grand Rapids & Ind. R. R. L. G. 7's, ...		5,799.89	
2,000 St. Louis & Iron Mt. R. R. 7's, ...		1,999.75	
2,000 Central Pacific R. R. 6's, ...		2,152.00	
3,000 Winona & St. Peter R. R. 7's, ...		3,846.50	
3,000 St. Paul, Min. & Man. R. R. 6's.		3,551.25	
1,000 Chic. St. Paul & Minn. R. R. 6's, ...		1,229.75	
3,000 St. Louis, Vand. & T. Haute R. R. 7's, . . .		3,306.75	
1,000 Lake Shore & Mich. So. R. R. 7's, ...		1,189.75	
1,000 Baltimore & Potomac R. R. 6's, ...		1,247.25	
2,000 St. Paul & Sioux City R. R. 6's, ...		2,474.50	
1,000 Iowa Midland R. R. 8's, ...		1,272.25	
1,000 Columbus & Ind. Cent. R. R. 7's, ...		1,218.50	
2,000 Union Pacific R. R. 6's, ...		2,154.50	
1,000 Chic. Burl. & Quincy R. R. 7's, ...		1,222.25	
2,000 Milwaukee & St. Paul R. R. 8's, ...		2,344.50	
1,000 Chic. Rock I. & Pacific R. R. 6's, ...		1,227.25	47,495.95
Property received as part of **Edwin Conant's** residuary bequest.			
$1,000 Midland R. R. of New Jersey 6's, ...		1,127.25	
48 shares Indian Orchard Mills, ...		1.00	1,128.25
Property received to found the **Henry Willard Williams** Professorship of Ophthalmology,			
100 shares State Street Exchange, ...		11,000.00	
37 " American Bell Telephone Co., . . .		7,400.00	
22 " Calamut & Hecla Mining Co., ...		6,600.00	25,000.00

Amount carried forward, ... $1,497,005.84

General Statement of Receipts and Disbursements
for the year ending

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amounts brought forward, .	$13,053.09	$1,204,384.64
George A. Gardner Fund (additional), ...	5,000.00	
Robert Treat Paine Fund “	153,447.51	
George William Sawin Fund “	622.00	
Dental School Endowment, “	50.00	
George Draper Fund, ...	48,458.50	
James Gordon Bennett Prize Fund, ...	1,000.00	
Sales Scholarship, ...	4,916.67	
“ Prize Fund, ...	1,000.00	
“ Book “	3,916.67	
Orlando W. Doe Scholarship, ...	5,000.00	
Cyrus M. Warren Fund, ...	5,400.00	
Frothingham Professorship, ...	31,325.00	
Louisa J. Hall Fund, ...	500.00	
Virginia Barret Gibbs Scholarship, ...	5,000.00	
Claudius M. Jones “	6,000.00	
Isaac Sweetser “	6,000.00	
Henry Willard Williams Fund, ...	25,000.00	315,689.44

SALES.

$13,200 Burl. & Mo. R. (Neb.) R. R. 6's (paid off),	13,200.00	
5,000 Chicago Water Loan 7's, ...	5,392.64	
5,000 Boston “ “ 5's, ...	5,866.67	
5,000 Grand Rapids & Ind. R. R. L. G. 7's, . .	5,799.89	
2,000 St. Louis & Iron Mt. R. R. 7's, ...	1,999.75	
2,000 Central Pacific R. R. 6's, ...	2,152.00	
3,000 Winona & St. Peter R. R. 7's, ...	3,846.50	
3,000 St. Paul, Minn. & Man. R. R. 6's, . . .	3,551.25	
1,000 Chic. St. Paul & Minn. R. R. 6's, . . .	1,229.75	
3,000 St. Louis, Vand. & T. Haute R. R. 7's, .	3,306.75	
1,000 Lake Shore & Mich. So. R. R. 7's, . . .	1,189.75	
1,000 Baltimore & Potomac R. R. 6's, ...	1,247.25	
2,000 St. Paul & Sioux City R. R. 6's, ...	2,474.50	
1,000 Iowa Midland R. R. 8's, ...	1,272.25	
1,000 Columbus & Ind. Cent. R. R. 7's, . . .	1,218.50	
2,000 Union Pacific R. R. 6's, ...	2,154.50	
1,000 Chic. Burl. & Quincy R. R. 7's, ...	1,222.25	
2,000 Milwaukee & St. Paul R. R. 8's, ...	2,344.50	
1,000 Chic. Rock I. & Pacific R. R. 6's, . . .	1,227.25	
3,000 Naumkeag St. Railway 5's, ...	3,039.17	
60 shares National Webster Bank, ...	5,792.50	
10 “ Blackstone N'l Bank, Uxbridge, .	947.50	
1100 “ New York, N. Haven & Hart. R.R.,	276,812.50	
142 rights Chic. Burl. & Quincy R. R., . .	99.40	
Amounts carried forward, . .	$347,387.02	$1,520,074.08

by the Treasurer of Harvard College,
July 31, 1893.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward, ...		$1,497,005.84
Improvements on Gray and Andrews Estates, ...		3,036.08
" " Hayward Estate, ...	$51,966.78	
Less sale of old material, ...	400.00	
	51,566.78	
Taxes on Hayward Estate for 1893, ...	5,160.00	
Interest charged during construction, ...	20,407.87	77,134.65
Invested in notes of Manufacturing Companies, &c.,	1,095,000.00	
Less mortgages and notes paid off, ...	684,500.00	410,500.00
Paid Baring Brothers & Co., in account, ...	161.98	
Less commission and expenses, ...	1.65	160.33
Amount carried forward, ...		$1,987,836.90

General Statement of Receipts and Disbursements for the year ending

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amounts brought forward, . .	$347,387.02	$1,520,074.08
E. Boston Ferry Co., dividend of capital,	192.50	
Pacific Mills, dividend of capital, . . .	800 00	
Wilson Mountain wood lot, Dedham, .	500.00	348,879.52

SUNDRIES.

From Dining Hall Association, to reduce debt, .	1,500.00	
From Lawn Tennis " " "	150.00	
Advances to premiums on R. R. Bonds, repaid, .	19,908.00	
" " accrued interest and expenses on Bonds repaid, ...	3,529.69	
" " improvements on Gray and Andrews Estates repaid, ...	7,938.14	
University Houses and Lands, repaid to capital, .	5,879.60	
Advances to Mus. of Comp. Zoölogy repaid, . .	64.90	38,970.33

Balance, August 1, 1892.		
Cash in Suffolk National Bank, ...	$22,323.61	
Cash in New England Trust Co., ...	21,475.27	
Cash in National Union Bank, ...	194,594.21	
Cash in hands of Charles F. Mason, Bursar,	16,548.23	
Term Bills due October, 1892, ...	142,429.47	
" " overdue, ...	2,415.08	399,785.87
Total, ...		$2,307,709.80

by the Treasurer of Harvard College.
July 31, 1893.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward		$1,987,836.90
Balance, July 31, 1893.		
Cash in Suffolk National Bank, ...	$19,329.62	
Cash in New England Trust Co., ...	3,074.67	
Cash in National Union Bank, ...	131,057.15	
Cash in hands of Charles F. Mason, Bursar, .	7,153.32	
Term Bills due October, 1893, ...	156,273.78	
" " overdue, ...	2,984.36	319,872.90
Total, ...		$2,307,709.80

The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1893.

Separate Investments, as stated in detail on pages 3, 4, and 5 of this report, consisting of		
Mortgages and Notes,	$139,697.00	
Railroad Bonds,	248,021.25	
Sundry Bonds,	213,082.50	
Railroad Stocks,	303,394.79	
Sundry Stocks,	25,001.00	
University Houses and Lands,	423.572.69	
Other Real Estate,	458,587.10	
Sundries,	39,392.94	
Amounting to		$1,850,749.27
And "General Investments" as follows: —		
Mortgages and Notes.		
Mortgages,	8,000.00	
Amoskeag Manufacturing Co.'s Note,	200,000.00	
Cocheco Manufacturing Co.'s Note,	50,000.00	
Edison Electric Illuminating Co.'s Note,	100,000.00	
Lawrence Manufacturing Co.'s Note,	70,000.00	
Massachusetts Cotton Mills' Note,	50,000.00	
Merrimack Manufacturing Co.'s Notes,	130,000.00	
Pacific Mills' Notes,	150,000.00	758,000.00
Railroad Bonds.		
$302,200 Burl. & Mo. R. in Nebr. non ex. 6's,	302,200.00	
104,000 Ft. Scott, So. E. & Mem., 1st M. 7's,	104,000.00	
393,000 Eastern, 1st Mortg. 6's,	393,000.00	
£19,600 Eastern, " " " Sterling,	95,383.40	
500,000 Chicago, Burl. & Quincy Consol. 7's,	500,000.00	
100,000 Chicago, Burl. & Quincy Conv. 5's,	100,000.00	
175,000 U. P. Omaha Bridge 1st M. 5's,	175,000.00	
100,000 Chic. & No.W. Madison Ex. 1st M. 7's,	100,000.00	
100,000 Minneapolis Union 1st M. 5's,	100,000.00	
100,000 Great Northern Coll. Trust 4's,	90,501.00	
Railroad Bond Premiums,	234,902.89	2,194,987.29
Sundry Bonds.		
$100,000 Metropolitan Tel. & Tel. Co. 1st M. 5's,	99,500.00	
100,000 New England " " " " 6's,	102,375.00	
150,000 Chicago Junct. Railways and Union Stock Yards Coll. Trust 5's,	143,905.00	
250,000 General Electric Co. 5's,	237,487.50	583,267.50
Amount carried forward,		$5,387,004.06

Amount brought forward, ...			**$5,387,004.06**
Sundry Stocks.			
Amoskeag Manufacturing Co., . .	**12 shares,**	**$3,654.00**	
Merrimack " " . .	**17 "**	**17,000.00**	
Pacific Mills, ...	**20 "**	**16,668.29**	
Chicago, Burl. & Quincy R. R.,	**500 "**	**45,000.00**	
N. Y. Central & Hud. River R. R.,	**1000 "**	**101,100.00**	**183,422.29**
Real Estate.			
Amory Estate, Franklin Street, Boston, . . .		**$165,615.81**	
Webb Estate, Washington Street, Boston, . .		**164,604.79**	
Gray and Andrews Estates, Washington Street, Boston, ...		**796,520.12**	
Cole Estate, Washington Street, Boston, . . .		**250,000.00**	
Lowell Estate, Washington Street, Boston, . .		**464,368.91**	
Hayward Estate, Washington Street, Boston, .		**506,986.15**	
Townsend Estate, Hawkins Street, Boston, . .		**29,476.09**	
Reversion of Buildings in Brattle Street, Boston,		**1,000.00**	**2,378,571.87**
Sundries.			
Advances to Dining Hall Association, ...		**19,732.16**	
" " Lawn Tennis Association, ...		**50.00**	
" " Bussey Trust, ...		**37,013.76**	
" " School of Veterinary Medicine, .		**19,019.87**	
" " Observatory, ...		**5,290.83**	
" " University Lands, ...		**30,000.00**	
" " Botanical Department		**12,357.58**	
Baring Brothers & Co., ...		**1,282.88**	
Term bills due October, 1893, ...		**156,273.78**	
" " overdue, ...		**2,984.36**	**284,005.22**
Cash in Suffolk National Bank, ...		**19,329.62**	
" " National Union Bank, ...		**131,057.15**	
" " hands of Charles F. Mason, Bursar, . . .		**7,153.32**	**157,540.09**
Total, ...			**$8,390,543.53**

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

Principal, Aug. 1, 1892.	UNIVERSITY FUNDS.	Principal, July 31, 1893.
$124,011.49	Stock Account (so called), . .	$93,830.23
141,638.74	Ins. and Guaranty F'd (so called), .	141,638.74
15,750.00	**Israel Munson** Fund, ...	15,750.00
16,871.63	**Leonard Jarvis** Fund, ...	16,871.63
25,000.00	**John C. Gray** Fund, ...	25,000.00
115,966.56	**George B. Dorr** Fund, ...	115,966.56
5,000.00	**Seth Turner** Fund, ...	5,000.00
113,817.44	**Francis E. Parker** Fund, . . .	113,817.44
30,000.00	**William Perkins** Fund,. . . .	30,000.00
25,370.03	**John L. Russell** Fund, ...	25,370.03
5,000.00	**Stanton Blake** Fund, ...	5,000.00
20,457.46	**Walter Hastings** Fund, ...	20,000.00
4,771.33	**Charlotte F. Blanchard** Fund . .	4,771.33
10,000.00	**Joseph Lee** Fund	10,000.00
	George Draper Fund, ...	48,458.50
63,480.95	President's Fund, ...	63,648.65
155.04	**Thomas Cotton** Fund, ...	154.81
5,250.00	**Samuel D. Bradford** Fund, . . .	5,250.00
267,802.22	Retiring Allowance Fund, ...	280,165.54
22,000.00	**John Cowdin** Fund, ...	22,000.00
100,721.14	**William Hayes Fogg** Endowment,	105,719.12
98,645.16	**William Hayes Fogg** Construc'n,	112,260.11
95,516.68	**Edwin Conant** Bequest, ...	100,098.37
	Catharine Page Perkins Bequest,	150,275.00
	Gifts for **Phillips Brooks** House .	6,021.79
56,598.14	**John Parker** Fellowships, . . .	56,447.38
11,367.72	**Robert Treat Paine** Fellowship, .	11,601.64
10,736.50	**Harris** Fellowship, ...	10,772.28
11,139.41	**John Thornton Kirkland** Fellows'p,	11,145.25
11,135.93	**James Walker** Fellowship, . . .	11,276.37
32,000.29	**Rogers** Fellowships, ...	32,097.09
108,27.75	**Henry Lee** Memorial Fellowship, .	10,918.07
10,330.22	**Ozias Goodwin** Memorial Fellows'p,	10,170.69
10,330.22	**H. B. Rogers** Memorial Fellowship,	10,395.69
81,950.54	**Henry T. Morgan** Fund, . . .	81,873.23
11,096.18	**John Tyndall** Scholarship, . . .	11,399.87
6,284.89	**George B. Sohier** Prize Fund,. .	6,835.64
2,349.28	**Sumner** Prize Fund, ...	2,466.50
349.82	**John O. Sargent** Prize Fund, . .	2,325.47
	James Gordon Bennett Prize Fund	1,006.24
$1,573,722.76	. . . Amounts carried forward, . .	$1,787,799.26

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$1,573,722.76	. . . Amounts brought forward, .	$1,787,799.26	
7,147.91	Lectures on Political Economy F'd,	7,504.59	
150.00	**Robert N. Toppan** Prizes (balance),	150.00	
200.00	**Robert Treat Paine** Prizes "	200.00	
150.00	Dante Prizes "	150.0C	
200.00	Semitic Prizes "		
4,457.09	Gifts for Semitic Collection "	2,342.12	
58.67	" " " Library "	451.47	$1,798,597.44

COLLEGE FUNDS.

27,748.64	**Alford** Professorship, ...	27,748.64	
28,337.40	**Boylston** "	28,337.40	
21,619.50	**Eliot** "	21,619.50	
10,000.00	**Eliot** " (**Jon. Phillips's gift**)	10,000.00	
3,500.01	**Erving** "	3,500.01	
35,990.99	**Fisher** "	35,990.99	
20,217.08	**Hersey** "	20,217.08	
21,744.18	**Hersey** " (**Thomas Lee's gift**),	21,744.18	
3,747.33	**Hollis** " (Mathematics),	3,747.33	
34,517.60	**Hollis** " (Divinity), . . .	34,517.60	
43,062.93	**McLean** "	43,062.93	
21,000.00	**Perkins** "	21,000.00	
25,020.19	**Plummer** "	25,020.19	
52,500.00	**Pope** "	52,500.00	
56,441.25	**Rumford** "	56,441.25	
23,139.83	**Smith** "	23,189.83	
188,588.35	**Gurney** Fund, ...	192,498.89	
16,240.38	Fund for Permanent Tutors, . . .	16,240.38	
15,796.97	**Lee** Fund for Reading, ...	15,796.97	
145,000.00	**Class Subscription** Fund, . . .	145,000.00	
2,935.26	**Paul Dudley** Fund for Lectures, .	2,981.72	
31,500.00	**Jonathan Phillips** F'd (unrestricted),	31,500.00	
1,050.00	**John A. Blanchard** " "	1,050.00	
5,661.51	**John W. P. Abbot** " "	5,944.04	
13,421.79	**Daniel H. Peirce** " "	13,488.76	
6,230.00	**Daniel Austin** " "	6,230.00	
2,165.68	Schol. & Benef. money ret. (balance),	1,305.35	
344.61	**Henry Flynt's** Bequest, ...	344.09	
3,458.83	**Abbot** Scholarship, ...	3,481.43	
1,196.20	**Alford** "	1,255.88	
5,352.79	**Bartlett** "	5,369.90	
5,686.59	**Bassett** "	5,700.37	
12,050.74	**Bigelow** "	12,152.08	
110,369.06	**Bowditch** "	111,293.17	
797.66	**Bright** " (balance), . . .	1,045.16	
$2,582,519.78	. . . Amounts carried forward, .	$1,001,265.12	$1,798,597.44

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$2,582,519.78	. . . **Amounts brought forward.**	**$1,001,265.12**	**$1,798,597.44**
3,616.41	**Browne** Scholarship,	3,596.85	
6,278.17	**Ruluff S. Choate** Scholarship,	6,191.44	
7,541.69	**Class of 1802** Scholarship,	7,618.04	
2,973.73	“ **1814** “	3,038.79	
5,788.05	“ **1815** “ **(Kirkland)**,	5,810.21	
4,024.14	“ **1817** “	4,124.94	
3,416.76	“ **1828** “	3,387.27	
4,000.16	“ **1835** “	4,199.76	
4,117.46	“ **1841** “	4,189.56	
4,767.96	“ **1852** “ **(Dana)**,	4,805.88	
10,000.00	“ **1856** “	10,000.00	
3,248.06	“ **1867** “	3,410.14	
10,642.39	**Crowninshield** “	10,773.43	
700.00	**W. H. Cudworth** “ (balance),	600.00	
5,455.40	**George & Martha Derby** Scholar'p,	5,477.60	
2,000.00	**Julius Dexter** Scholarship,	2,099.80	
	O. W. Doe “	5,103.94	
5,417.08	**W. S. Eliot** “	5,520.73	
5,885.96	**Farrar** “	5,929.67	
10,304.21	**Richard Augustine Gambrill** Sch.	10,418.38	
6,013.64	**Charles Haven Goodwin** Sch.	6,013.74	
3,544.74	**Greene** Scholarship,	3,721.64	
	Price Greenleaf Sch. (balance),	200.00	
5,988.53	**Levina Hoar** Scholarship,	5,954.04	
10,463.31	**Hodges** “	10,718.75	
5,494.96	**Hollis** “	5,569.16	
66.66	**George E. Lowell** “ (balance),		
5,543.48	**Matthews** “ “	5,356.34	
5,297.87	**Merrick** “	5,362.24	
7,750.26	**Morey** “	7,784.47	
	Lady Mowlson “	5,249.50	
6,707.34	**Pennoyer** “	6,653.61	
3,588.14	**Perkins** “	3,767.18	
957.12	**Rodger** “	1,004.87	
3,381.78	**Henry B. Rogers** “	3,400.54	
3,652.14	**Edward Russell** “	4,044.35	
	Sales “	5,086.24	
1,057.09	**Saltonstall** “	4,178.45	
6,399.89	**Mary & Leverett Saltonstall** Sch.,	6,719.25	
3,221.25	**Sever** Scholarship,	3,281.98	
9,971.32	**Sewall** “	10,068.87	
7,140.23	**Shattuck** “	47,392.52	
5,828.70	**Slade** “	5,786.23	
3,698.25	**Story** “	3,882.78	
2,587.21	**Stoughton** “	2,651.73	
4,119.92	**Gorham Thomas** Scholarship,	4,125.51	
7,083.67	**Toppan** “	7,137.16	
$2,842,254.91	. . . Amounts carried forward,	$1,282,666.70	**$1,798,597.44**

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$2,842,254.91	. . . Amounts brought forward,	$1,282,666.70	$1,798,597.44
24,875.54	**Townsend** Scholarship,	24,833.51	
4,104.67	**Walcott** “	4,142.85	
10,356.56	**Whiting** “	10,473.37	
10,261.98	**Henry B. Humphrey** Fund,	10,374.05	
9,832.19	Exhibitions,	9,845.81	
1,891.28	**Palfrey** Exhibition,	1,905.64	
1,200.00	**Samuel Ward Fund,**	1,200.00	
1,761.24	**John Glover** “	1,849.11	
11,010.31	**Quincy Tufts** “	11,019.71	
5,380.35	**Day** “	5,386.31	
10,396.74	**Munroe** “	10,405.55	
4,990.14	**Price Greenleaf** Aid (balance),	4,624.71	
4,025.09	**Boylston** Prizes for Elocution,	3,970.94	
13,351.60	**Bowdoin** Prizes for Dissertations,	13,467.86	
	Sales Prize,	1,033.28	
1,302.52	**Hopkins** Gift for “Deturs” (balance),	1,355.98	
754.20	**Chauncey Wright** Fund,	766.82	
50,000.00	**Increase S. Wheeler** Fund,	50,000.00	
1,033.57	Fund for Religious Services,	1,033.57	
15,314.58	**John E. Thayer** Fund,	15,403.41	
6,400.76	Classical Publ. F'd of **Class of 1856,**	6.420.17	
40,099.13	Botanic Department Fund,	39,780.00	
58,882.31	**Lowell Fund for a Botanic Garden,**	59,882.31	
29,774.46	Herbarium Fund,	31,749.14	
75,000.00	Physical Laboratory Endowment,	75,000.00	
10,611.34	**Henry Warren Torrey** Fund,	11,140.83	
8,168.09	**Joseph Lovering** “	8,364.89	
	Cyrus M. Warren “	5,545.96	
1,765.68	**Jefferson** Physical Lab'y (balance),	1,974.81	
914.08	Sundry Gifts (unexpended balances),	1,890.28	
1,394.95	Gifts for Psychol. Lab'y and Lib'y “	505.38	
1,498.06	“ “ Classical Library “	1,139.42	
351.23	“ “ Historical “ “	433.59	
1,534.22	“ “ Geological Department “	1,224.25	
1,193.10	“ “ Sanskrit “	1,875.12	
4,125.00	“ “ College Salaries,	2,375.00	1,715,060.33

LIBRARY FUNDS.

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
100,000.00	**Eben Wright** Fund,	100,000.00	
26,026.04	**Constantius** Fund,	26,094.34	
500.00	**Jarvis** Fund,	500.00	
11,572.25	**Daniel Treadwell** Fund,	11,925.34	
10,628.65	Subscription for Library,	10,554.45	
2,115.35	**Bowditch** Fund,	2,140.51	
$3,416,652.17	. . . Amounts carried forward,	$151,214.64	$3,513,657.77

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$3,416,652.17	. . . Amounts brought forward,	$151,214.64	$3,513,657.77
234.50	**Bright** Fund (balance),	122.50	
27,757.59	**Edwin Conant** Fund,	27,727.47	
5,376.12	**Denny** “	5,341.60	
5,320.33	**Farrar** “	5,346.38	
3,175.22	**Haven** “	3,161.78	
10,133.24	**Hayes** “	10,093.01	
5,319.87	**Hayward** “	5,271.28	
2,430.27	**Hollis** “	2,407.17	
2,146.09	**Homer** “	2,134.49	
5,352.49	**Lane** “	5,331.03	
23,203.02	**Lowell** “	23,492.09	
60,239.46	**Minot** “	60,032.36	
7,195.01	**Lucy Osgood** “	7,181.14	
7,100.83	**Mary Osgood** “	7,078.35	
	Sales “	8,930.15	
5,504.27	**Salisbury** “	5,505.97	
20,131.69	**Sever** “	20,168.01	
4,037.22	**Shapleigh** “	3,981.61	
37,589.90	**Sumner** “	37,530.57	
5,001.13	**Tucker** “	5,002.63	
5,315.53	**Ward** “	5,300.62	
15,906.55	**Walker** “	15,880.36	
364.06	**Wales** Gift (balance),	345.67	
576.54	**Waterston** “ “	596.83	
10,090.66	**J. Huntington Wolcott** Fund,	10,049.99	
155.36	Sundry gifts, etc. (unexpended balances),	171.05	
	Gifts for Book Stacks,	13,684.02	438,082.77

DIVINITY SCHOOL FUNDS.

29,182.56	Divinity School (balance),	26,360.41	
37,583.74	**Bussey** Professorship,	37,583.74	
16,015.81	**Parkman** “	16,015.81	
6,008.43	**Hancock** “	6,008.43	
49,345.73	**Winn** Prof. of Ecclesiastical History,	49,845.73	
	Frothingham Professorship	32,236.82	
20,280.38	**Dexter** Lectureship,	20,280.38	
9,184.69	**Henry Lienow** Fund,	9,184.69	
5,250.00	**Mary P. Townsend** “	5,250.00	
2,100.00	**Winthrop Ward** “	2,100.00	
1,050.00	**Samuel Hoar** “	1,050.00	
1,050.00	**Abraham W. Fuller** Fund,	1,050.00	
1,050.00	**Caroline Merriam** “	1,050.00	
7,875.00	**Joseph Baker** “	7,875.00	
40,000.00	**Th. Tileston** of New York Endowm’t,	40,000.00	
$3,912,285.46	. . . Amounts carried forward,	$255,891.01	$3,951,740.54

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$3,912,285.46	. . . Amounts brought forward,	$255,891.01	$3,951,740.54
10,000.00	**Henry P. Kidder** Fund,	10,000.00	
17,000.00	**Oliver Ames** Fund,	17,000.00	
1,000.00	**Abby Crocker Richmond** Fund,	1,000.00	
71,427.02	New Endowment,	71,427.02	
	Louisa J. Hall Fund,	500.00	
1,000.00	**John L. Russell** Fund,	1,000.00	
1,432.98	**John W. Quinby** Fund,	1,504.49	
10,000.00	**William B. Spooner** "	10,000.00	
5,000.00	**Edwin Conant** "	5,000.00	
911.34	**Lewis Gould** "	911.34	
2,177.95	**Joshua Clapp** "	2,177.95	
525.00	**Hannah C. Andrews** "	525.00	
1,000.00	**Adams Ayer** "	1,000.00	
890.00	**Daniel Austin** "	890.00	
14,188.45	**Jackson** Foundation,	14,309.77	
5,189.95	**Thomas Cary** Scholarships,	5,208.93	
2,525.12	**George Chapman** "	2,517.78	
4,167.35	**Joshua Clapp** "	4,195.28	
4,808.20	**J. Henry Kendall** "	4,848.12	
3,310.64	**Nancy Kendall** "	3,289.20	
13,078.38	**Abner W. Buttrick** Fund,	13,079.30	
1,050.00	**William Pomroy** "	1,050.00	
2,777.14	Beneficiary money returned,	2,915.71	430,240.90

LAW SCHOOL FUNDS.

62,482.64	**Law** School (balance),	76,301.20	
15,750.00	**Dane** Professorship,	15,750.00	
23,979.82	**Bussey** "	23,979.82	
8,340.81	**Royall** "	8,340.81	
94,994.97	**Weld** "	94,994.97	
50,845.23	**Bemis** "	53,382.40	
47,021.25	Law School Book Fund,	47,021.25	
160.00	Scholarship money returned,	160.00	319,930.45

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

9,088.40	Lawrence Scientific School (balance),	8,159.20	
40,805.73	Professorship of Engineering,	40,805.73	
61,536.43	**Abbott Lawrence** Fund,	61,536.43	
50,375.00	**James Lawrence** "	50,375.00	
30,686.85	**John B. Barringer** "	30,686.85	
500.00	**George A. Gardner** "	5,556.90	197,120.11
$4,582,312.11	. . . Amounts carried forward,		$4,899,032.00

Principal, Aug. 1, 1892.			Principal, July 31, 1893.
$4,582,312.11	. . . Amounts brought forward,		$4,899,032.00

MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.

50,000.00	**Gray** Fund for Zoölogical Museum,	$50,000.00	
297,933.10	**Agassiz Memorial** Fund, } . .	297,933.10	
7,594.01	Teachers' and Pupils' " } . .	7,594.01	
117,469.34	Permanent Fund, ...	117,469.34	
7,740.66	**Humboldt** "	7,740.66	
	Virginia Barret Gibbs Scholarship,	4,957.93	
100,400.00	**Sturgis Hooper** Fund, ...	100,240.00	585,935.04

MEDICAL SCHOOL FUNDS.

85,876.02	Medical School (balance), ...	89,061.85	
19,192.65	**Jackson** Medical Fund, ...	19,192.65	
17,129.20	**Geo. C. Shattuck** "	17,129.20	
13,822.15	**Warren** Fund for Anatom'l Museum,	13,686.15	
3,544.65	**Boylston** Fund for Medical Prizes,	3,471.55	
3,779.01	**Boylston** " " " Books,	3,967.58	
1,855.29	Medical Library Fund, ...	1,602.36	
2,000.00	**Quincy Tufts** Medical Fund, . .	2,000.00	
25,512.68	**Edward M. Barringer** " . .	25,512.68	
15,765.11	**Mary W. Swett** Fund, ...	15,765.11	
20,000.00	**Samuel W. Swett** " . . . . : .	20,000.00	
1,836.08	**Samuel E. Fitz** "	1,836.08	
6,393.31	**J. Ingersoll Bowditch** Fund, . .	6,505.52	
	Henry Willard Williams Fund, .	25,000.00	
32,750.00	New Subscription Fund, ...	38,750.00	
203.69	**John Foster** Income for Medical Students (balance), ...	3.69	
5.330.48	**D. W. Cheever** Scholarship, . .	5,396.45	
	C. M. Jones " . .	6,000.00	
	Isaac Sweetser " . .	6,020.41	
5,325.17	**Geo. Cheyne Shattuck** Memorial Fellowship, ...	5,365.89	
5,156.42	**John Ware** Memorial Fellowship,	5,132.45	
5,156.42	**Chas. Eliot Ware** " "	5,357.45	
2,496.77	**Ellis** Gifts (balance), ...	3,149.27	319,906.34

DENTAL SCHOOL FUNDS.

6,681.97	Dental School (balance), ...	8,801.44	
15,205.85	Dental School Endowment, . . .	15,255.85	
	Gifts for Building, ...	6,427.63	30,484.92
$5,458,462.14	. . . Amounts carried forward, . .		$5,835,358.30

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$5,458,462.14	. . . Amounts brought forward,		$5,835,358.30
	OBSERVATORY FUNDS.		
110,293.88	**Edward B. Phillips** Fund, . .	$110,293.88	
21,000.00	**James Hayward** " . . .	21,000.00	
28,979.87	**David Sears** " . . .	29,702.92	
11,539.18	**Josiah Quincy** " . . .	11,058.73	
2,000.00	**Charlotte Harris** " . . .	2,000.00	
5,000.00	**Thomas G. Appleton** " . . .	5,000.00	
13,380.00	**Augustus Story** Fund, ...	13,380.00	
50,000.00	Observatory Endowment, ...	50,000.00	
120,110.35	**Robert Treat Paine** Fund, . .	273,557.86	
50,000.00	**Paine** Professorship, ...	50,000.00	
213,932.71	**Uriah A. Boyden** Fund, ...	208,013.10	
32,032.65	**Bruce** Gift (balance), ...	25,267.97	
2,500.00	**J. Ingersoll Bowditch** Fund, . .	2,500.00	
1,351.13	**Draper Memorial** (balance), . .	2,016.03	
6,162.51	Gifts for Building " . . .		808,790.49
	OTHER FUNDS FOR SPECIAL PURPOSES.		
413,092.80	**Bussey** Trust (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School), . . .	413,092.80	
12,701.35	Bussey Institution (balance), . . .	13,085.07	
609.02	**Bussey** Building Fund, ...	609.02	
155,648.53	**James Arnold** "	156,036.87	
6,229.70	Arboretum Construction Gifts, . .	8,678.48	
50,000.00	**Bright** Legacy, ...	50,000.00	
39,830.94	**Robert Troup Paine** Fund, . . .	41,570.11	
42,000.00	**James Savage** Fund, ...	42,000.00	
3,171.50	**John Foster** "	3,171.50	
29,939.33	**Henry Harris** "	29,939.33	
16,420.38	**Gray** Fund for Engravings, . . .	16,794.78	
30,274.52	**John Witt Randall** Fund, . . .	30,298.15	
4,190.90	**Gospel Church** Fund, ...	4,400.03	
3,625.00	Fund of the **Class of 1853**, . . .	3,625.00	
1,000.00	" " " " " **1834**, . . .	1,000.00	
717,893.71	**Price Greenleaf** Fund, ...	727,206.21	
25,947.19	**Gore** Annuity Fund, ...	26,941.95	
4,698.97	**Lucy Osgood** Annuity Fund, . .	4,513.45	
3,063.00	**Geo. William Sawin** Fund, . .	3,685.00	
10,082.67	**Huntington Frothingham Wolcott** Fund, ...	10,499.00	
72,569.14	**Charles L. Hancock** Bequest, . .	72,890.47	
47,251.34	Gains and Losses for General Investments, ...	70,129.88	1,730,167.05
$7,816,984.41	. . . Amounts carried forward,		$8,369,315.84

Principal, Aug. 1, 1892.		Principal, July 31, 1893.	
$7,816,984.41	. . . Amounts brought forward,		$8,369,315.84

FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.

16,447.73	**Daniel Williams** Fund for the conversion of the Indians, ...	16,422.50	
4,812.84	**Sarah Winslow** F'd, for the Minister and Teacher at Tyngsborough, Mass.,	4,805.19	21,227.69
$7,838,244.98			$8,390,543.53

Changes in the Funds during the year ending July 31, 1893.

Total amount of Funds and balances, July 31, 1893, as before stated,		$8,390,543.53	
Total amount of Funds and balances, August 1, 1892, as before stated,		7,838,244.98	
Showing a total increase during the year of			$552,298.55
Which is made up as follows: —			
Gifts forming new Funds or increasing old ones,		315,689.44	
Increase more than decrease of Funds and balances, which appear both at the beginning and end of the year,		80,500.97	
Increase more than decrease of Funds established during the year,		1,606.13	
Gains from changes of investments,		9,504.00	
Credit balances created,		176,608.44	
		$583,908.98	
Deduct from this amount			
Decrease of Stock Account, by excess of expenditures over income in College, Library, and University accounts,	$25,181.26		
Sundry balances used up,	6,429.17		
		31,610.43	
			$552,298.55

Net increase of Funds and balances as above,	$268,219.54
Less decrease as above,	31,610.43
Leaving amount of the net increase of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,	$236,609.11

Statement showing Changes in the Different Funds

Increase of Funds and balances which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

UNIVERSITY.

President's Fund, ...	$167.70	
Retiring Allowance Fund, ...	12,363.32	
Robert Treat Paine Fellowship, ...	233.92	
Sumner Prize Fund, ...	117.22	
James Walker Fellowship, ...	140.44	
Rogers "	96.80	
John T. Kirkland "	5.84	
Henry Lee Memorial Fellowship, ...	90.32	
H. B. Rogers " "	65.47	
George B. Sohier Prize Fund, ...	50.75	
Lectures on Political Economy Fund, ...	356.68	
Harris Fellowship, ...	35.78	
Tyndall Scholarship, ...	303.69	
Gift for Semitic Library, ...	392.80	
Wm. Hayes Fogg Endowment, ...	4,997.98	
" " " Construction, ...	13,614.95	
Edwin Conant Bequest, ...	4,581.69	$37,615.35

COLLEGE.

Daniel H. Peirce Fund, ...	66.97	
Paul Dudley Fund, ...	46.46	
John W. P. Abbot Fund, ...	282.58	
Gurney Fund, ...	3,910.54	
Abbot Scholarship, ...	22.60	
Alford "	59.68	
Bartlett "	17.11	
Bassett "	13.78	
Bigelow "	101.34	
Bowditch "	924.11	
Bright " (balance), ...	247.50	
Class of 1802 Scholarship, ...	76.35	
" **1814** "	65.06	
" **1815** " **(Kirkland)**, . .	22.16	
" **1817** "	100.80	
" **1835** "	199.60	
" **1841** "	72.10	
" **1852** " **(Dana)**, ...	87.92	
" **1867** "	162.08	
Crowninshield "	131.04	
Julius Dexter "	99.80	
Amounts carried forward, ...	$6,659.58	$37,615.35

and balances during the year ending July 31, 1893.

Decrease of Funds and balances which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

UNIVERSITY.

John Parker Fellowship,	$150.76	
Walter Hastings Fund,	457.46	
Thomas Cotton "	.23	
Ozias Goodwin Memorial Fellowship,	159.53	
Henry T. Morgan Fund,	77.31	
John O. Sargent Prize Fund,	24.35	
Gifts for Semitic Collection (balance),	2,114.97	$2,984.61

COLLEGE.

Henry Flynt Bequest,	.52	
Browne Scholarship,	19.56	
R. S. Choate Scholarship,	86.73	
Class of 1828 "	29.49	
W. H. Cudworth "	100.00	
Levina Hoar "	34.49	
Matthews "	187.14	
Pennoyer "	53.78	
Slade "	42.47	
Townsend "	42.03	
Price Greenleaf Aid (balance),	365.43	
Boylston Prizes for Elocution,	54.15	
Botanic Department Fund,	319.13	
Scholar. and Benefic. Money Returned (balance),	860.33	
Gifts for Psychological Lab. and Library, "	889.57	
" " Classical Library "	358.64	
" " Geological Department "	309.97	
" " College Salaries "	1,750.00	5,503.88

LIBRARY.

Bright Fund (balance),	112.00	
Denny "	34.52	
Conant "	30.12	
Haven "	13.44	
Hayes "	40.23	
Hayward "	48.59	
Hollis "	23.10	
Homer "	11.60	
Lane "	21.46	
Minot "	207.10	
Lucy Osgood "	13.87	
Mary Osgood "	22.48	
Shapleigh "	55.61	
Amounts carried forward,	**$634.12**	**$8,487.99**

Statement showing Changes in the Different Funds

INCREASE.

Amounts brought forward,	$6,659.53	$37,615.35
George & Martha Derby Scholarship,	22.20	
W. S. Eliot Scholarship,	103.65	
Farrar “	43.71	
R. A. Gambrill “	114.17	
C. H. Goodwin “	.10	
Greene “	176.90	
Hodges “	255.44	
Hollis “	74.20	
Merrick “	64.37	
Morey “	84.21	
Perkins “	179.04	
Rodger “	47.75	
Henry B. Rogers “	18.76	
Edward Russell “	192.21	
Saltonstall “	121.36	
Mary & Leverett Saltonstall Scholarship,	319.36	
Sever Scholarship,	60.73	
Sewall “	97.55	
Shattuck “	252.29	
Story “	184.53	
Stoughton “	64.52	
Toppan “	53.49	
Gorham Thomas “	13.62	
Walcott “	5.59	
Whiting “	38.18	
Exhibitions,	116.81	
John Glover Fund,	87.87	
Bowdoin Prizes,	116.26	
Chauncey Wright Fund,	12.62	
Henry B. Humphrey Fund,	112.07	
Classical Publication Fund,	19.41	
Herbarium Fund,	1,974.68	
Jefferson Physical Laboratory (balance),	209.13	
Palfrey Exhibition,	14.36	
Quincy Tufts Fund,	9.40	
Day Fund,	5.96	
Hopkins Gift for “Deturs” (balance),	53.46	
Sundry gifts (unexpended balances),	976.20	
Henry Warren Torrey Fund,	529.49	
Joseph Lovering Fund,	196.80	
Munroe Fund,	8.81	
John E. Thayer Fund,	88.83	
Gifts for Historical Department,	82.36	
“ “ Sanskrit “	682.02	14,494.00
Amount carried forward,		$52,109.35

and balances during the year ending July 31, 1893. (*Continued.*)

DECREASE.

Amounts brought forward, ...	$634.12	$8,487.99
Subscription Fund, ...	74.20	
Sumner "	59.33	
Ward "	14.91	
Walker "	26.19	
J. Huntington Wolcott Fund, ...	40.67	
Wales Gift (balance), ...	18.39	867.81

DIVINITY SCHOOL.

Balance, ...	2,822.15	
Nancy Kendall Scholarship, ...	21.44	
George Chapman Scholarship, ...	7.34	2,850.93

LAWRENCE SCIENTIFIC SCHOOL.

Balance, ...		929.20

MUSEUM OF COMPARATIVE ZOÖLOGY.

Sturgis Hooper Fund, ...		160.00

MEDICAL SCHOOL.

Medical Library Fund, ...	252.93	
Warren Fund for Anatomical Museum, ...	136.00	
Boylston Fund for Medical Books, ...	73.10	
John Foster inc. for Med. Students (balance),	200.00	
John Ware Memorial Fellowship, ...	23.97	686.00

OBSERVATORY.

Bruce Gift (balance), ...	6,764.68	
Uriah A. Boyden Fund, ...	6,111.11	
Josiah Quincy Fund, ...	480.45	13,356.24

FUNDS FOR SPECIAL PURPOSES.

Lucy Osgood Annuity Fund, ...	185.52	
Daniel Willims Fund, ...	25.23	
Sarah Winslow "	7.65	218.40
		$27,556.57
Sundry balances used up.		
Gifts for fire proof building at Observatory, . .	6,162.51	
G. E. Lowell Scholarship, ...	66.66	
Semitic Prizes, ...	200.00	6,429.17
Decrease of Fund established during the year.		
Virginia Barret Gibbs Scholarship, ...		42.07
Decrease of Stock Account by excess of expenditures over income, in College, Library, and University Accounts, ...		25,181.26
Amount carried forward, ...		$59,209.07

Statement showing Changes in the Different Funds

INCREASE.

Amount brought forward, ...		$52,109.35

LIBRARY.

Constantius Fund, ...	$68.30	
Bowditch "	25.16	
Farrar "	26.05	
Lowell "	289.07	
Salisbury "	1.70	
Sever "	36.32	
Tucker "	1.50	
Waterston Gift (balance), ...	20.29	
Sundry Gifts, etc. "	15.69	484.08

DIVINITY SCHOOL.

Winn Professorship, ...	500.00	
John W. Quinby Fund, ...	71.51	
Jackson Foundation, ...	121.32	
Joshua Clapp Scholarship, ...	27.93	
J. H. Kendall "	39.92	
A. W. Buttrick Fund, ...	.92	
Beneficiary Money Returned (balance), ...	138.57	
Thomas Cary Scholarship, ...	18.98	919.15

LAW SCHOOL.

Balance, ...	13,818.56	
Bemis Professorship, ...	2,537.17	16,355.73

LAWRENCE SCIENTIFIC SCHOOL.

George A. Gardner Fund, ...		56.90

MEDICAL SCHOOL.

Balance, ...	3,185.83	
Boylston Fund for Medical Books, ...	188.57	
D. W. Cheever Scholarship, ...	65.97	
J. Ingersoll Bowditch Fund, ...	112.21	
Geo. Cheyne Shattuck Memorial Fellowship,	40.72	
Charles Eliot Ware " "	201.03	
Ellis Gifts (balance)	652.50	4,446.83

OBSERVATORY.

David Sears Fund, ...	723.05	
Draper Memorial (balance), ...	664.90	1,387.95
Amount carried forward, ...		$75,759.99

and balances during the year ending July 31, 1893. (*Continued.*)

DECREASE.

Amount brought forward, ...	$59,209.07
Amount carried forward, ...	$59,209.07

Statement showing Changes in the Different Funds

INCREASE.

Amount brought forward,		$75,759.99

FUNDS FOR SPECIAL PURPOSES.

Bussey Institution (balance),	$383.72	
James Arnold Fund,	388.34	
Robert Troup Paine Fund,	1,739.17	
Gospel Church Fund,	209.13	
Gore Annuity "	994.76	
Huntington Frothingham Wolcott Fund,	416.33	
Gains and Losses for General Investments,	22,878.49	
Arboretum Construction Gifts,	2,448.78	
Gray Fund for Engravings,	374.40	
John Witt Randall Fund,	23.63	
Charles L. Hancock Bequest,	321.33	30,178.08

DENTAL SCHOOL.

Balance,		2,119.47
		$108,057.54
Increase of Funds established during the year.		
James Gordon Bennett Prize,	6.24	
Lady Mowlson Scholarship,	249.50	
Orlando W. Doe "	103.94	
Isaac Sweetser "	20.41	
Sales "	163.57	
Sales Book Fund,	13.48	
Sales Prize "	33.28	
Frothingham Professorship,	911.82	
Cyrus M. Warren Fund,	145.96	1,648.20
Gains from change of investment.		
Price Greenleaf Fund,	9,312.50	
Uriah A. Boyden Fund,	191.50	9,504.00
Credit balances created.		
Phillips Brooks House,	6,021.79	
Catharine Page Perkins Bequest,	150,275.00	
Gifts for Library Stack Room,	13,684.02	
Dental School Building Gifts,	6,427.63	
Price Greenleaf Scholarship (unexpended bal.),	200.00	176,608.44

Total,	$295,818.18

and balances during the year ending July 31, 1893. (*Continued.*)

DECREASE.

Amount brought forward, ...	$59,209.07
Balance, which is the net increase of the Funds and balances for the year ending July 31, 1893, excluding gifts for capital account, ...	236,609.11
Total, ...	$295,818.18

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every Fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example,— no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 76.

TABLE No. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account, from special investment,	$1,149.17	
Interest on balance,	4,789.50	$5,938.67
Income of the following funds: —		
Insurance and Guaranty, from special investm't,		7,067.77
Joseph Lee, from special investment,		499.00
John C. Gray, from special investment,		1,247.50
George B. Dorr, from special investment,		5,786.73
Francis E. Parker, from special investment,		5,679.49
Israel Munson,		785.92
Leonard Jarvis,		841.91
Samuel D. Bradford,		261.97
Seth Turner,		249.50
Henry T. Morgan,		4,089.35
Henry Harris, ½ of income,		746.98
William Perkins,		1,497.00
Stanton Blake,		249.50
George Draper,		2,014.51
John Cowdin, from special investment,		1,336.62
Walter Hastings, from sp. investm't,	$390.54	
Interest on accumulated income,	22.80	413.34
John L. Russell (part of),		1,166.16
Charlotte F. Blanchard,		238.07
Thomas Cotton,		7.34
President's,		3,167.70
Parker Fellowships,		2,824.24
John Thornton Kirkland Fellowship,		555.84
Harris Fellowship,		535.78
James Walker Fellowship,		555.69
Rogers Fellowships,		1,596.80
Robert Treat Paine Fellowship,		567.26
John Tyndall Scholarship,		553.69
Henry Lee Memorial Fellowship,		540.32
Ozias Goodwin " "		515.47
Amount carried forward,		$51,530.12

TABLE I., CONTINUED.

RECEIPTS.

Amount brought forward,		$51,530.12	
Henry Bromfield Rogers Memorial Fellowship,		515.47	
Sumner Prize,		117.22	
George B. Sohier Prize,		250.00	
John O. Sargent Prize,		75.65	
James Gordon Bennett Prize,		6.24	
Retiring Allowance (accumulating),		13,363.32	
Lectures on Political Economy,		356.68	
William Hayes Fogg Endowment,		5,025.98	
" " " Construction,		3,251.45	
Gifts for Semitic Collections and Lib'y (balance),		93.53	
Edwin Conant Bequest, from special investment,	$140.00		
Interest,	2,722.64	2,862.64	
Catharine Page Perkins Bequest,		275.00	
Gifts for **Phillips Brooks** House,		38.53	$77,761.83
For immediate use.			
Gifts for Semitic Department,		825.00	
Bequest of **Catharine Page Perkins**,		150,000.00	
Gifts for **Phillips Brooks** House,		5,983.26	
Wm. Hayes Fogg Construction (additional),		10,374.25	
Edwin Conant Bequest, "		1,729.05	
Robert N. Toppan, gift for prize,		150.00	169,061.56
Balance remaining after dividing the net income among the Funds,		478.82	
For care of the **Sarah Winslow** Fund,		6.20	
Sale of Catalogues, Calendars, Directories, &c.,		968.80	
Sale of grass and wood,		90.75	
Examination fees for degrees of Ph.D.,		30.00	
Rent of houses in No. Harvard St., Brighton,		323.00	
Use of houses by College officers,		645.83	2,543.40
			$249,366.79

PAYMENTS.

Overseers' Expenses.		
Advertising, postage, &c.,	$265.91	
Printing President's Annual Report,	1,230.00	
Printing Treasurer's " "	265.00	
Printing other reports, and auditing Treasurer's accounts,	499.00	$2,259.91
Office Expenses.		
President's,	1,003.65	
Treasurer's,	1,220.12	
Bursar's,	2,770.17	
Publication Agent,	2,602.88	
Supt. of Buildings' and Janitor's,	105.13	
Corporation Rooms (fuel, rent, furniture, &c.),	2,547.70	10,249.65
Amount carried forward,		$12,509.56

TABLE I., CONTINUED.

PAYMENTS.

Amount brought forward,		$12,509.56
Salaries.		
President,	$8,007.57	
Treasurer and Deputy Treasurer,	6,000.00	
Secretary of the University,	2,500.00	
Secretary of the Board of Overseers,	200.00	
Bursar,	3,000.00	
Publication Agent,	1,500.00	
Bursar's Assistant,	1,300.00	
Clerks Treasurer's office,	3,800.00	
Superintendent of Buildings,	2,400.00	28,707.57
Memorial Hall and Sanders Theatre.		
Repairs, fuel, gas, &c.,		718.85
General Expenses.		
Advertising,	61.15	
Labor, &c. on grounds,	5,384.55	
Subscription to Mercantile Agency,	300.00	
Watering streets, and water,	363.85	
Watchmen,	1,290.75	
Freight, diplomas, and sundries,	601.80	
Printing,	473.60	
Music, Commencement,	185.00	
Annual Catalogue and Calendar,	3,001.50	
Repairs and improvements,	4,159.75	
Taxes and insurance,	511.15	
Services of Electrical Engineers, &c.,	248.52	
Expenses of delegates,	100.40	
World's Fair expenses,	8,977.61	25,659.63
		$67,595.61
Sundry payments from Special Funds.		
Sundry Expenses, **Fogg** Collection,	28.00	
Surveying, &c., for **Fogg** Art Museum,	10.75	
Sundry expenses **Conant** Bequest,	10.00	
Semitic Collection,	2,533.50	
" Books and Binding,	107.20	
Retiring Allowance Fund,	1,000.00	3,689.45
Fellowships and Scholarships.		
John Parker,	2,975.00	
Harris,	500.00	
John Thornton Kirkland,	550.00	
James Walker,	415.25	
Rogers,	1,500.00	
Morgan,	4,166.66	
Robert Treat Paine,	333.34	
Ozias Goodwin Memorial,	675.00	
Henry Bromfield Rogers Memorial,	450.00	
Henry Lee Memorial,	450.00	
John Tyndall Scholarship,	250.00	
University Scholarships,	2,950.00	15,215.25
Amount carried forward,		$86,500.31

TABLE I., CONTINUED.

PAYMENTS.

Amount brought forward,		$86,500.31
Prizes.		
Andrew P. Peabody,	$200.00	
George B. Sohier,	250.00	
John O. Sargent,	100.00	
Robert N. Toppan,	150.00	700.00
		$87,200.31

TABLE NO. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.		
Instruction,	$253,973.67	
Rents available for general expenses,	52,468.85	$306,442.52
Income of Scholarship Funds.		
Abbot,	172.60	
Alford (accumulating),	59.68	
Bartlett,	267.11	
Bassett,	283.78	
Bigelow,	601.34	
Bowditch,	5,507.41	
Bright, ½ income of **Bright** Legacy,	1,247.50	
Browne,	180.44	
Ruluff Sterling Choate,	313.27	
Class of 1802,	376.35	
“ **1814,**	148.40	
“ **1815 (Kirkland),**	288.82	
“ **1817,**	200.80	
“ **1828,**	170.51	
“ **1835** (accumulating),	199.60	
“ **1841,**	205.44	
“ **1852 (Dana),**	237.92	
“ **1856,** from special investment,	600.00	
“ **1867,**	162.08	
Crowninshield,	531.04	
George and **Martha Derby,**	272.20	
Julius Dexter,	99.80	
Orlando W. Doe,	103.94	
William Samuel Eliot,	270.31	
Farrar,	293.71	
Richard Augustine Gambrill,	514.17	
Charles Haven Goodwin,	300.10	
Greene (accumulating),	176.90	
Price Greenleaf,	2,800.00	
Levina Hoar, for the town of Lincoln,	298.85	
Hodges,	522.10	
Hollis,	274.20	
Henry B. Humphrey,	512.07	
Amounts carried forward,	$18,192.44	$306,442.52

TABLE II., CONTINUED.

RECEIPTS.

Amounts brought forward, ...		$13,192.44	$306,442.52
William Merrick, ...		264.37	
Morey, ...		386.72	
Lady Mowlson, ...		249.50	
Pennoyer. Interest, ...	$112.92		
Annuity, ...	123.35	236.27	
Perkins (accumulating), ...		179.04	
Rodger (accumulating), ...		47.75	
Henry Bromfield Rogers, ...		168.76	
Edward Russell (accumulating), ...		192.21	
Saltonstall, ...		121.36	
Mary and **Leverett Saltonstall**, ...		319.36	
Savage, ...		300.00	
Sales, ...		163.57	
Sever, ...		160.73	
Sewall, ...		497.55	
Shattuck, ...		2,352.29	
Slade, ...		290.87	
Story (accumulating), ...		184.53	
Stoughton (accumulating), ...		64.52	
Gorham Thomas, ...		205.59	
Toppan, ...		353.49	
Townsend, ...		1,241.31	
Walcott, ...		204.84	
Whiting, ...		516.81	26,893.88
Received from the Trustee of the **Thayer** Scholarships,		2,800.00	
" for the **Warren H. Cudworth** "		600.00	
" " " **George Emerson Lowell** "		400.00	
" " " **Matthews** Scholarships (½ of net rents of Hall), ...		5,412.86	9,212.86
Other Beneficiary Funds, income of.			
"Exhibitions,"		490.62	
Palfrey "Exhibition,"		94.36	
Samuel Ward. From special investment, . .		50.00	
John Glover (accumulating), ...		87.87	
Quincy Tufts, ...		549.40	
Moses Day, ...		268.46	
Munroe, ...		518.81	
Price Greenleaf Aid, ...		16,822.88	18,882.40
Prize Funds, income of.			
Ward Nicholas Boylston Prizes for Elocution,		200.85	
James Bowdoin Prizes for Dissertations, . .		666.26	
Edward Hopkins Gift for "Deturs."			
From Trustees, ...	$225.94		
Interest on unexpended balance, .	65.02	290.96	
Chauncey Wright.		37.62	
Sales, ...		33.28	1,228.97
Amount carried forward, ...			$362,660.63

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$362,660.63
Funds for **Instruction**, income of,		
Alford Professorship, ...	$1,384.68	
Boylston "	1,414.02	
Eliot "	1,078.84	
J. Phillips' addition to **Eliot** Professorship,	500.00	
Erving Professorship, ...	174.65	
Fisher "	1,795.95	
Hersey " ⅗ inc. of the Fund,	605.30	
Hollis " (Mathematics), . .	186.98	
Hollis " (Divinity), . . .	1,722.45	
McLean "	2,148.84	
Perkins "	1,047.90	
Plummer "	1,248.50	
Pope "	2,619.75	
Rumford "	2,816.41	
Smith "	1,154.69	
Fund for Permanent Tutors, ...	810.37	
Thos. Lee Fund for the Hersey Professorship,	1,085.03	
Thos. Lee " " Reading, ...	788.27	
Class Subscription, ...	7,235.50	
Henry Flynt, ...	16.37	
Paul Dudley Fund, ...	146.46	
Gifts for salaries, ...	2,500.00	32,480.96
Income of **Jonathan Phillips** unrestricted Fund,	1,571.85	
" " **John A. Blanchard** " "	52.39	
" " **Daniel H. Pierce** " "	669.76	
" " **J. W. P. Abbot** Fund (accumulating), .	282.53	
" " **John E. Thayer** "	764.22	
" " Fund for Religious Services, ...	51.60	
" " **Gurney** Fund, ...	9,410.54	
" " Classical Publication Fund of the **Class** of 1856, ...	319.41	
" " **Increase Sumner Wheeler** Fund, . . .	2,495.00	
" " **Henry Warren Torrey** Fund, ...	529.49	
" " The **Joseph Lovering** Fund for Physical Research, ...	407.58	
" " **Cyrus M. Warren** Fund, ...	145.96	16,700.33
Hemenway Gymnasium.		
For use of lockers, ...		2,918.00
Carey Athletic Building.		
For use of lockers, ...		138.00
Jefferson Physical Laboratory.		
Income from Endowment, ...	3,742.50	
Interest on unexpended balance, ...	88.12	3,830.62
Amount carried forward, ...		$418,728.54

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward, ...			$418,728.54
Sanskrit Department.			
Additional gift from **Henry C. Warren**, . . .		$750.00	
Interest on unexpended balance, ...		84.52	784.52
Charles Fairchild's gift for Geological Department.			
Interest on unexpended balance, ...			40.03
Psychological Laboratory and Library.			
Interest on unexpended balance, ...			12.02
Classical Library.			
Interest on unexpended balance, ...			38.81
Botanic Garden and Botanic Museum.			
Income of Botanic Department Fund, ...		2,000.94	
" " **Lowell** Fund, ...		2,952.78	
" " **John L. Russell** Fund, ...		24.95	
Rent of house, ...		700.00	
Gifts for present use, ...		650.00	
Sale of flowers, &c., to Soc. Coll. Inst. of Women,		75.00	6,403.67
Herbarium.			
Income of Fund, ...		1,485.72	
Gifts for present use, ...		3,550.00	
Received from **Asa Gray's** copyrights, . . .		3,074.65	
Income of **John L. Russell** Fund, ...		74.85	
Sale of duplicate books, ...		60.66	
" " plants, &c., ...		50.95	8,296.83
Sundries.			
For use of rooms by College Society, ...		510.00	
Sale of tickets to Commencement Dinner, . . .		564.00	
" " Chemistry and Physics pamphlets, . . .		521.79	
" " old examination papers, ...		125.65	
" " Historical Monographs, ...		190.96	
" " old material, ...		34.00	
Fees for admission examinations, &c., ...		1,257.00	
Fees for Summer Courses, ...	$7,607.50		
Other receipts from Summer Courses,	84.36	7,691.86	
Laboratory fees received.			
Chemistry, ...	$6,946.10		
Physics, ...	2,480.00		
Natural History, ...	2,163.75		
Philosophy, ...	172.50	11,762.35	
Gifts for books for class-room libraries, &c., . .		1,440.50	
Gifts for illustrated lectures in Latin and Greek department, ...	$825.00		
Unexpended appropriation return'd,	165.00		
Interest on unexpended balance, .	3.66	993.66	25,091.77
Total receipts, ...			$459,396.19

TABLE II., CONTINUED.

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot,	$150.00	
Bartlett,	250.00	
Bassett,	270.00	
Bigelow,	500.00	
Bowditch,	4,583.30	
Bright,	1,000.00	
Browne,	200.00	
Ruluff Sterling Choate,	400.00	
Warren H. Cudworth,	700.00	
Class of 1802,	300.00	
" **1814,**	83.34	
" **1815 (Kirkland),**	266.66	
" **1817,**	100.00	
" **1828,**	200.00	
" **1841,**	133.34	
" **1852 (Dana),**	200.00	
" **1856,**	600.00	
Crowninshield,	400.00	
Hodges,	266.66	
George and **Martha Derby,**	250.00	
William Samuel Eliot,	166.66	
Farrar,	250.00	
Richard Augustine Gambrill,	400.00	
Charles Haven Goodwin,	800.00	
Price Greenleaf,	2,800 00	
Levina Hoar, for the town of Lincoln,	333.34	
Hollis,	200.00	
Henry B. Humphrey,	400.00	
George Emerson Lowell,	466.66	
Matthews,	5,600.00	
William Merrick,	200.00	
Morey,	352.51	
Pennoyer,	290.00	
Henry Bromfield Rogers,	150.00	
Savage,	300.00	
Sever,	100.00	
Sewall,	400.00	
Shattuck,	2,100.00	
Slade,	333.34	
Thayer,	2,800.00	
Gorham Thomas,	200.00	
Toppan,	300.00	
Townsend,	1,283.34	
Walcott,	166.66	
Whiting,	400.00	31,145.81
Amount carried forward,		$31,145.81

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward,			$31,145.81
Paid other Beneficiaries from the following Funds.			
Exhibitions,		$477.00	
Palfrey exhibition,		80.00	
Samuel Ward,		50.00	
Quincy Tufts,		540.00	
Day,		262.50	
Munroe,		510.00	
Price Greenleaf Aid,		17,188.31	
Scholarship and Beneficiary Money Returned,		860.33	19,968.14
Prizes.			
Boylston Prizes for Elocution,		255.00	
Bowdoin Prizes for Dissertations,		550.00	
"Deturs" from **Hopkins** Donation,		237.50	
Chauncey Wright Fund,		25.00	1,067.50
Hemenway Gymnasium.			
Salaries and wages,		6,240.00	
Janitors and cleaning,		1,421.18	
Fuel, water, gas, and sundries,		1,763.05	
Repairs and improvements,		1,139.65	
Apparatus,		940.56	
		11,504.44	
Less amount received from other Departments,		2,200.18	9,304.26
Carey Athletic Building.			
Repairs and improvements,		212.98	
Janitors and cleaning,		485.00	
Fuel, water, gas, and sundries,		389.23	
Insurance,		50.00	1,137.21
Jefferson Physical Laboratory.			
Spent on building and fixtures,		155.07	
Laboratory expenses,	$4,066.42		
Less part paid by the College,	600.00	3,466.42	3,621.49
John E. Thayer Fund.			
Expenses of Quarterly Journal of Economics,			675.39
The **Joseph Lovering** Fund for Physical Research.			
Paid sundry accounts,			210.78
Charles Fairchild's gift for Geological Department.			
Sundry expenses,			350.00
Classical Publication Fund of the **Class of 1856**.			
Printing Studies in Classical Philology,			300.00
Sanskrit Department.			
Printing Harvard Oriental Series, &c.,			102.50
Amount carried forward,			$67,883.08

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward, ...		$67,883.08
Psychological Laboratory and Library.		
Paid for apparatus, books, &c., ...		901.59
Salaries for instruction, ...		238,056.19
Payments for College Edifices not valued on Treasurer's books.		
Cleaning and care, ...	$12,589.69	
Insurance, ...	105.00	
Repairs, improvements, &c., ...	16,412.86	29,107.55
Botanic Garden and Botanic Museum.		
For salaries, labor, repairs, materials, &c., . . .	11,466.99	
Interest on advances, ...	362.54	11,829.53
Herbarium.		
For salaries, labor, repairs, materials, &c.. . . .		6,322.15
Summer Schools.		
Salaries, ...	8,978.62	
Clerical services, ...	400.00	
Supplies, materials, &c., ...	516.27	
Printing, ...	359.75	
Advertising, ...	209.80	
Instruments andapparatus, ...	117.92	10,582.36
Paid from gifts for books for Political Economy Dept.,	138.45	
" " " " French "	48.52	
" " " " Mathematics "	12.78	
" " " " German "	30.81	
" " " " Social Questions,	11.39	
" " " " Classical Library,	397.45	
" " " " Historical "	512.64	1,152.04
" " illustrated lectures in Latin and Greek Departments, ...		614.93
" " Historical apparatus, ...		6.08
Appropriations for collections and laboratories.		
Physical apparatus (Prof. Trowbridge), ...	1,000.00	
Mineralogy and Chemistry (Prof. Cooke), . . .	1,000.00	
Botany (Prof. Goodale), ...	250.00	
Botany (Prof. Farlow), ...	200.00	
Geology (Prof. Shaler), ...	350.00	
Zoölogy (Prof. Mark), ...	250.00	
Psychology (Prof. Münsterberg), ...	250.00	
Fine Arts (Prof. Norton), ...	200.00	
Geography (Prof. Davis), ...	250.00	
Drawing (Asst. Professor Moore), ...	150.00	
Casts & photographs " "	200.00	
Amounts carried forward, ...	$4,100.00	$366,455.50

TABLE II., CONTINUED.

PAYMENTS.

Amounts brought forward, ...		$4,100.00	$366,455.50
Appropriations (*continued*).			
Petrography (Asst. Professor Wolff), ...		150.00	
Photographic apparatus (Instr. Fitz), ...		250.00	
Laboratory fees appropriated, ...		11,802.35	
Fuel and service in Nat. Hist. Labor's, ...		1,500.00	$17,802.35
Jefferson Physical Laboratory.			
Expenses paid by the College, ...			600.00
Appleton Chapel.			
Preaching and morning services, ...		3,070.00	
Organist and Choir-master, ...		1,500.00	
Choir, ...		1,400.00	
Books, hymnals, and music, ...		488.13	
Fuel, gas, cleaning, &c., ...		1,218.52	
Services and wages, ...		156.95	7,833.60
General Expenses.			
Admission examinations, ...		1,667.59	
Advertising, ...		139.07	
Commencement Dinner, ...		651.51	
Deans and Chairmen Committees, salaries, clerical and office expenses, ...		11,539.00	
Fuel, &c., ...		7,559.99	
Furniture, ...		1,007.09	
Freight, diplomas, and sundries, ...		565.16	
Gas, ...		3,043.72	
Music, Class-Day, ...		125.00	
Pews hired in Cambridge churches, ...		1,286.25	
Printing office, expenses, ...	$19,461.21		
Less amount received from other Departments, ...	11,544.73	7,916.48	
Printing, ...		16.00	
Services of examiners and proctors, ...		4,196.54	
" " assistants to instructors, ...		4,619.24	
" " undergraduates, ...		1,063.08	
Assistant in Geological Library, ...		250.00	
Attendants in Historical Library, ...		518.00	
Committee on reception of Students, ...		96.55	
Special services at registrations, ...		48.91	
Supplies, tools, and materials, ...		464.46	
Watchmen, ...		869.00	
Water rates, ...		647.54	
Laboratory assistant, ...		281.14	
Collation, ...		225.00	
Books, ...		178.39	
Examination of Schools, ...		747.96	
Stationery and postage, ...		620.69	50,343.36
Total payments, ...			$443,034.81

TABLE No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.			
Subscription for Library,		$530.39	
Nathaniel I. Bowditch,		105.54	
Bright, ½ income of the **Bright** Legacy,		1,247.50	
Constantius, ½ of income,		649.35	
Edwin Conant, ¼ of income,		346.78	
Denny,		268.26	
Eliza Farrar,		265.47	
Horace A. Haven,		158.43	
Francis B. Hayes,		505.64	
George Hayward,		265.47	
Thomas Hollis,		121.26	
Sidney Homer,		107.09	
Frederick A. Lane,		267.06	
Lowell,		1,157.83	
Charles Minot. From special investm't,	$4,200.00		
Interest on unexpended balance,	11.92	4,211.92	
Lucy Osgood,		359.03	
Mary Osgood,		354.34	
Francis Sales,		130.29	
Stephen Salisbury,		274.65	
Sever,		1,004.58	
Samuel Shapleigh,		201.45	
George B. Sohier (part of),		75.04	
Charles Sumner,		1,875.74	
Ichabod Tucker. From special investment,		200.00	
George W. Wales. Gift,	$200.00		
Interest on unexpended balance,	18.16	218.16	
James Walker,		793.76	
Thomas W. Ward,		265.27	
Executors of **Robert Waterston.**			
Interest on unexpended balance,		28.79	
J. Huntington Wolcott,		503.46	
Gift from Dante Society,		50.00	
Sale of duplicates, &c.,		25.00	
Gift from **Alfred T. White,**		15.00	16,582.55
James Savage Fund for general expenses (¾ of income),		1,346.85	
Constantius “ “ “ ½ “ “		649.35	
Edwin Conant “ “ “ ¾ “ “		1,040.34	
Daniel Treadwell “ “ “		578.94	
Daniel Austin “ “ “		310.88	
Eben Wright “ “ “		4,990.00	
Jarvis “ “ “		24.95	
Price Greenleaf “ “ “		16,822.89	25,764.20
Amount carried forward,			$42,346.75

TABLE III., CONTINUED.

RECEIPTS.

Amount brought forward,		$42,346.75
Fees for use of Library,	$85.00	
Sale of Bulletins, &c.,	23.00	108.00
Gifts for Library Stack Room, received through **Moses Williams**, Treasurer.	13,566.89	
Additional subscriptions,	60.00	
Interest on balance,	57.13	13,684.02
		$56,138.77

PAYMENTS.

For Books from		
Subscription Fund,	$604.59	
Bowditch "	80.38	
Bright "	1,359.50	
Conant "	376.90	
Constantius "	581.05	
Denny "	302.78	
Farrar "	239.42	
Haven "	171.87	
Hayes "	545.87	
Hayward "	314.06	
Hollis "	144.36	
Homer "	118.69	
Lane "	288.52	
Lowell "	868.76	
Minot "	4,419.02	
Lucy Osgood "	372.90	
Mary Osgood "	376.82	
Sales "	116.81	
Salisbury "	272.95	
Sever "	968.26	
Shapleigh "	257.06	
Sohier "	24.29	
Sumner "	1,935.07	
Tucker "	198.50	
Walker "	819.95	
Ward "	280.18	
J. Huntington Wolcott Fund,	544.13	
Wales Gift,	236.55	
Waterston Gift,	8.50	
Dante Society Gift,	33.04	
Duplicate money,	38.53	
Subscription of 1880,	2.74	$16,902.05
Salaries and wages,	25,647.31	
Binding,	1,304.61	
Stationery and postage,	530.25	
Amounts carried forward,	$27,482.17	$16,902.05

TABLE III., CONTINUED.

PAYMENTS.

Amounts brought forward,	$27,482.17	$16,902.05
Fuel,	1,252.27	
Repairs and improvements,	206.19	
Freight, water, supplies, and sundries,	611.19	
Janitors and cleaning,	1,000.59	
Furniture,	506.13	
Bulletins, and other printing,	1,806.07	
Book and Coin cases,	520.21	33,384.82
		$50,286.87

TABLE No. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.		
Divinity School, balance,	$1,456.23	
Benjamin Bussey Professorship,	1,875.44	
Parkman Professorship,	799.20	
John Hancock Professorship,	299.80	
Winn Professorship of Ecclesiastical History,	2,462.37	
Frothingham Professorship,	911.82	
Samuel Dexter,	1,011.97	
Henry Lienow,	458.33	
Mary P. Townsend,	261.97	
Winthrop Ward,	104.79	
Samuel Hoar,	52.39	
Abraham W. Fuller,	52.39	
Caroline Merriam,	52.39	
Joseph Baker,	392.96	
Thomas Tileston of New York Endowment,	1,996.00	
Oliver Ames,	848.30	
Henry P. Kidder,	499.00	
Abby Crocker Richmond,	49.90	
New Endowment,	3,564.21	
William B. Spooner Legacy,	499.00	$17,648.46
Income of Scholarship Funds.		
Jackson Foundation,	707.98	
Thomas Cary,	258.98	
George Chapman,	126.00	
Joshua Clapp,	207.93	
J. Henry Kendall,	239.92	
Nancy Kendall,	165.22	1,706.03
Amount carried forward,		$19,354.49

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward,		$19,354.49
Income of other Funds.		
Joshua Clapp,	$108.68	
William Pomroy,	52.39	
Hannah C. Andrews,	26.20	
Lewis Gould,	45.46	
Daniel Austin,	44.41	
Abner W. Buttrick,	652.59	
Adams Ayer,	49.90	
John W. Quinby,	71.51	
John L. Russell,	49.90	
Edwin Conant,	249.50	
Louisa J. Hall,	9.38	
Interest on Beneficiary money returned (balance),	138.57	1,498.49
Benjamin Bussey Trust (¼ of net income for use of this School),		3,729.39
Sale of duplicate books,		56.75
Term Bills.		
For instruction,	3,039.68	
For rents,	2,970.00	6,009.68
From College Library, for Cataloguing,		181.29
		$30,830.09

PAYMENTS.

For Salaries for instruction,	$21,427.55	
Services and wages,	2,320.26	
Labor, repairs, and improvements,	1,892.94	
Cleaning and care of rooms,	1,384.18	
Books and binding,	802.75	
Printing,	175.25	
Insurance,	140.00	
Fuel, gas, and water,	885.33	
Stationery, postage, diplomas, and sundries,	151.96	
Collation,	85.00	
Furniture,	104.52	
Proportion of expenses of Gymnasium,	146.44	
Advertising,	97.40	$29,613.58
Paid the incumbents of the following Scholarships.		
Jackson Foundation,	586.66	
Thomas Cary,	240.00	
George Chapman,	133.34	
Joshua Clapp,	180.00	
Nancy Kendall,	186.66	
J. Henry Kendall,	200.00	1,526.66
Paid beneficiaries from the following Funds:		
Abner W. Buttrick,	651.67	
William Pomroy,	58.14	709.81
		$31,850.05

TABLE NO. V.

LAW SCHOOL

RECEIPTS.

Income of the following Funds.		
Law School, balance,	$3,117.90	
Nathan Dane Professorship,	785.92	
Benjamin Bussey "	1,196.60	
Isaac Royall "	416.22	
Weld "	4,740.25	
Bemis "	2,537.17	
Law School Book Fund,	2,346.35	
Benjamin Bussey Trust (½ of net income for use of this School),	3,729.38	
John Foster, income for Law Students every second year,	158.28	$19,028.07
Term Bills.		
For instruction,		57,950.00
Anonymous gift for instruction in the Peculiarities of Massachusetts Law,		1,000.00
Sale of Catalogues,		49.35
		$78,027.42

PAYMENTS.

For Salaries for instruction,	$35,250.00	
Librarian and Assistants,	5,417.02	
Janitors, cleaning, &c.,	1,105.49	
Books and binding,	9,447.09	
Fuel,	1,021.50	
Gas,	968.51	
Printing,	1,043.85	
Scholarships,	1,950.00	
Labor, repairs, and improvements,	1,234.60	
Stationery and postage,	270.25	
Freight, diplomas, and sundries,	430.62	
Water rates,	82.50	
Furniture,	825.25	
Services of examiners and proctors,	158.66	
Proportion of expenses of Gymnasium,	1,407.26	
Advertising,	36.00	
World's Fair expenses,	123.09	
Insurance,	900.00	$61,671.69

TABLE NO. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.	
Medical School, balance,	$4,285.21
Jackson,	957.73
Warren, for Anatomical Museum,	689.72
Amount carried forward,	$5,932.66

TABLE VI., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$5,932.66	
Ward Nicholas Boylston, for Medical Prizes, .		176.90	
Ward Nicholas Boylston, for Medical Books,		188.57	
George C. Shattuck, ...		854.74	
Hersey Professorship, ⅖ income of the fund, . .		403.53	
Medical Library Fund, ...		92.56	
Quincy Tufts, ...		99.80	
David Williams Cheever Scholarship, ...		265.97	
Isaac Sweetser Scholarship, ...		220.41	
George Cheyne Shattuck Memorial Fellowship,		265.72	
John Ware " "		257.28	
Charles Eliot Ware " "		257.28	
Edward M. Barringer, ...		1,273.10	
Henry Harris, ½ of income, ...		746.98	
Mary W. Swett, ...		786.67	
Samuel W. Swett, ...		998.00	
Samuel E. Fitz, ...		91.62	
J. Ingersoll Bowditch, ...		319.01	
Henry Willard Williams, from special invest.,		447.00	
New subscription, ...		1,786.02	
Ellis Gifts (balance), ...		67.51	$15,531.83
Gifts for present use, ...			3,321.25
Term Bills.			
For instruction, ...		86,109.28	
For graduation fees, ...		2,010.00	
In Chemical Laboratory, breakage and chemicals,		1,260.24	
In Practical Anatomy, for use of material, . . .		942.00	
For extra examination fees, &c., ...		87.00	90,408.52
From Dental and Veterinary Schools for Laboratory instruction, ...			642.00
Repayment of advances for the purchase of microscopes,			655.00
Use of laboratory by State of Massachusetts, ...			125.00
Sale of old material, ...			6.75
			$110,689.85

PAYMENTS.

Boylston Medical Prizes.			
Prize, ...		$200.00	
Advertising, ...		50.00	$250.00
Warren Anatomical Museum.			
Insurance, ...		347.52	
Expenses and additions to collection, ...		478.20	825.72
Edward M. Barringer Scholarship No. 1, . .	$300.00		
" " 2, . .	200.00	500.00	
David Williams Cheever Scholarship, ...		200.00	
Isaac Sweetser Scholarship, ...		200.00	
John Ware Memorial Fellowship, ...		281.25	
Charles Eliot Ware Memorial Fellowship, ...		56.25	
Amounts carried forward, ...		$1,237.50	$1,075.72

TABLE VI., CONTINUED.

PAYMENTS.

Amounts brought forward, ...	$1,237.50	$1,075.72
George Cheyne Shattuck Memorial Fellowship, . .	225.00	
Faculty Scholarships, ...	800.00	
Beneficiaries from **Foster** income, ...	200.00	
Other Beneficiaries, ...	100.00	2,562.50
J. Ingersoll Bowditch F'd, Physiolog'l apparatus, &c.,		206.80
Ellis Gifts, Expenses and salary, Physiology and Pathological Bacteriology, ...		1,415.01
Books and binding, from Library Fund, ...		345.49
Chemical Laboratory, ...	1,248.10	
Physiological Laboratory, ...	400.00	
Anatomy, ...	2,750.00	
Pathological Laboratory, ...	1,030.00	
Bacteriological Laboratory, ...	1,800.00	
Obstetrics, ...	300.00	
Histology and Embryology, ...	745.00	
Bandaging and apparatus, ...	125.00	
Therapeutics and Hygiene, ...	150.00	
Pharmacology, ...	600.00	
Salaries for instruction, ...	67,112.00	
Repairs and improvements, ...	2,282.43	78,542.53
Graduates courses, fees repaid to Instructors, ...	1,870.00	
Summer " " " " "	1,865.00	3,735.00
General Expenses.		
Advertising and catalogues, ...	1,000.00	
Fuel, ...	2,204.25	
Gas, ...	994.75	
Insurance, ...	1,045.00	
Printing, ...	749.50	
Services and wages, ...	3,220.00	
Stationery and postage, ...	502.58	
Water rates, ...	580.80	
Furniture, ...	452.25	
Janitors and cleaning, ...	4,874.65	
Freight, diplomas, and sundries, ...	556.99	
Supplies, tools, and material, ...	784.75	
World's Fair expenses, ...	1,613.04	18,578.56
		$106,461.61

TABLE No. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of the following Funds.		
Dental School, balance, ...	$333.43	
Endowment, ...	760.78	
Gifts for new building, ...	402.63	$1,496.84
Amount carried forward, ...		$1,496.84

TABLE VII., CONTINUED.

RECEIPTS.

Amount brought forward,		$1,496.84
Term Bills, for instruction,		7,350.00
Fees from Infirmary,	$3,900.00	
" " Laboratory,	1,957.37	5,857.37
Gifts for present use,		95.00
" " new building,		6,025.00
		$20,824.21

PAYMENTS.

Advertising and catalogues,	$388.45	
Care of rooms and cleaning,	1,051.65	
Freight, diplomas, and sundries,	638.15	
Fuel,	305.54	
Gas,	110.35	
Supplies, apparatus, &c.,	2,640.61	
Furniture,	138.14	
Repairs and improvements,	571.40	
Salaries for instruction,	5,650.00	
Stationery and postage,	140.01	
Water rates,	70.00	
Medical School, for Laboratory instruction,	237.00	
Delegate's expenses,	48.20	
Printing,	287.61	$12,277.11

TABLE No. VIII.

LAWRENCE SCIENTIFIC SCHOOL.

RECEIPTS.

Income of the following Funds.		
Lawrence Scientific School, balance,	$453.49	
Professorship of Engineering,	2,036.22	
Abbott Lawrence,	3,070.65	
James Lawrence,	2,513.71	
John B. Barringer,	1,531.28	
George A. Gardner,	201.70	$9,807.05
Term Bills, for instruction,		27,780.00
Gifts for present use,		2,000.00
		$39,587.05

PAYMENTS.

George A. Gardner Fund.		
Photographs &c. for Geological department,		$144.80
Salaries for instruction,	$26,351.31	
Instruments and apparatus,	3,415.80	
Books and binding,	465.72	
Amounts carried forward,	$30,232.83	$144.80

TABLE VIII., CONTINUED.

PAYMENTS.

Amounts brought forward,	$30,232.83	$144.80
Printing,	606.25	
Fuel,	585.59	
Gas, water, freight, and sundries,	272.85	
Janitor and cleaning,	336.50	
Labor and repairs,	927.26	
Expenses Chemical Laboratory (part of),	38.14	
Scholarships,	3,400.00	
Proportion of expenses of Gymnasium,	646.48	
Furniture,	621.08	
Advertising,	241.08	
Stationery and postage,	70.35	
Services and wages,	768.22	
Supplies, tools, and materials,	645.96	
Electric power,	435.50	
World's Fair expenses,	486.46	40,314.55
		$40,459.35

TABLE No. IX.

MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of the following Funds.

Gray Fund for Zoölogical Museum,		$2,495.00	
Agassiz Memorial. Interest,	$13,753.39		
From special investment,	1,115.68	14,869.07	
Teachers and Pupils,		378.94	
Humboldt,		386.28	
Permanent Fund for Museum of Zoölogy,		5,861.70	
Virginia Barret Gibbs Scholarship,		207.93	$24,198.92
Sturgis Hooper,			4,990.00
			$29,188.92

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.

Gray,	$2,495.00	
Agassiz Memorial, general expenses,	14,804.17	
Agassiz Memorial, advances repaid,	64.90	
Teachers and Pupils,	378.94	
Humboldt,	386.28	
Permanent,	5,861.70	
Virginia Barret Gibbs Scholarship,	250.00	$24,240.99
Sturgis Hooper Fund, Professor of Geology,		5,150.00
		$29,390.99

TABLE NO. X.

OBSERVATORY.

RECEIPTS.

Income of the following Funds.		
Edward B. Phillips,	$5,503.67	
James Hayward,	1,047.90	
Robert Treat Paine,	8,226.81	
Paine Professorship of Practical Astronomy,	2,495.00	
Uriah A. Boyden,	10,680.80	
Augustus Story,	667.66	
David Sears,	1,446.10	
Josiah Quincy,	575.80	
James Savage (½ of net income),	448.95	
Charlotte Harris,	99.80	
Thomas G. Appleton,	249.50	
J. Ingersoll Bowditch,	124.75	
New Endowment,	2,495.00	$34,061.74
From sale of time signals,	109.46	
" " " Observatory publications,	48.73	
" " " grass,	20.00	178.19
Mrs. Henry Draper, gift for special research (additional),	9,999.96	
Interest on unexpended balance,	67.41	10,067.37
Miss Catherine W. Bruce's gift for a photographic telescope, interest on unexpended balance,		913.97
Subscriptions towards the construction of a fire-proof building,	3,500.00	
Interest on balance,	16.55	3,516.55
From **A. Lawrence Rotch**, on account of repayment of expenses of publishing the Blue Hill observations,		500.00
Use of house by College officer,		600.00
		$49,837.82

PAYMENTS.

From **Uriah A. Boyden** Fund, supplies, apparatus, services, &c.,		$16,791.91
" **Draper** Memorial, supplies, apparatus, services, &c.,		9,403.47
" **Bruce** gift for telescope,		7,695.20
" **Josiah Quincy** Fund, printing Observatory publications,		1,065.75
" subscriptions for a fire-proof building,		9,662.51
Salaries and wages,	$16,367.12	
Cleaning and care of Observatory,	514.91	
Gas,	62.02	
Instruments and apparatus, including repairs on same,	264.68	
Repairs and improvements on buildings and grounds,	2,674.31	
Amounts carried forward,	$19,883.04	$44,618.84

TABLE X., CONTINUED.

PAYMENTS.

Amounts brought forward, ...	$19,883.04	$44,618.84
Stationery, postage, and telegraphing, ...	614.25	
Fuel, ...	324.23	
Books and binding, ...	432.05	
Water rates, ...	56.40	
Printing, ...	1,263.84	
Freight, chemicals, and sundries, ...	925.38	
Furniture, ...	62.90	
Interest on advances, ...	212.41	
Supplies and materials, ...	508.34	
Rent of house, ...	90.00	
Insurance, ...	19.50	24,392.34
		$69,011.18

TABLE NO. XI.

BUSSEY INSTITUTION.

RECEIPTS.

Interest on unexpended balance, ...	$638.78	
From Bussey Trust (½ net income), ...	7,453.77	
From Bussey Building Fund, ...	30.39	
Fees for instruction, ...	310.00	
Sale of wood, hay, and sundries, ...	872.39	
Horticultural Department, sale of flowers, plants, &c., . .	1,871.63	
Board of horses, cattle, &c., ...	1,807.41	$12,984.37

PAYMENTS.

For Salaries, ...	$6,600.00	
Books, ...	117.55	
Fuel for school building, ...	112.87	
Services and wages, ...	2,211.58	
Horticultural Department, expenses, ...	2,292.37	
Repairs and improvements, ...	399.41	
Grain, farming tools, &c., ...	751.06	
Advertising, ...	48.91	
Freight, telegrams, weighing hay, &c., ...	66.90	$12,600.65

James Arnold Fund.

Receipts.

Income of Fund, ...	$7,766.89

Payments.

19/20 of income carried to Arnold Arboretum, ...	$7,378.55

TABLE XI., CONTINUED.

Arnold Arboretum.

Receipts.

Income from James Arnold Fund,		$7,378.55	
Sale of wood, grass, &c.,		838.75	
Rent of barn,		4.00	
Gift for purchase of books,		5,453.17	
Gifts for construction account,	$10,333.33		
Interest on same,	241.65	10,574.98	
Interest on deposit,		18.91	$24,268.36

Payments.

Salary of Director and Assistant,	$3,500.00	
Expenses of Arboretum, services, labor, &c.,	10,776.14	
Specimens and expenses for Herbarium and Museum,	2,085.52	
Books,	5,457.92	$21,819.58

TABLE No. XII.

SCHOOL OF VETERINARY MEDICINE.

RECEIPTS.

Term bills, for instruction,	$4,258.27	
" " " graduation fees,	120.00	$4,378.27
Subscribers to Veterinary Hospital,		1,470.00
Fees from Hospital and Forge,		18,996.69
Interest on deposit with New England Trust Co.,		17.28
Gift for present use,		50.00
		$24,912.24

PAYMENTS.

Salaries and wages,	$15,066.32	
Instruments and apparatus,	195.61	
Rent,	960.00	
Hay, grain, supplies, &c.,	4,239.74	
Printing,	440.25	
Stationery, postage, telephone, &c.,	326.86	
Repairs and improvements,	561.68	
Fuel,	883.59	
Water,	43.40	
Gas,	376.44	
Freight, diplomas, and sundries,	201.95	
Taxes,	259.29	
Interest on advances,	1,149.52	
Advertising,	107.41	
Medical School for Laboratory instruction,	405.00	
Legal expenses,	21.58	
Furniture,	26.17	
Books,	9.15	$24,773.46

Table No. XIII.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,		$20,919.54

Payments.

Annuities,	$6,000.00	
Certified copy of will,	2.00	
One-half of the remaining income to Bussey Institution,	7,458.77	
One-quarter " " " Divinity School,	3,729.39	
" " " " " Law School,	3,729.38	$20,919.54

Price Greenleaf Fund.

Receipts.

Income of special investment,		$36,645.77

Payments.

Scholarships,	$2,800.00	
Beneficiary money transferred to College account,	16,822.88	
Balance of income for Library expenses,	16,822.89	$36,445.77

Gray Fund for Engravings.

Receipts.

Interest on Fund,	$798.25

Payments.

To the Treasurer of the Museum of Fine Arts,	$423.85

Daniel Williams Fund.

Receipts.

Interest on Fund,		$820.76

Payments.

Treasurer of Mashpee Indians,	$564.00	
" " Herring Pond Indians,	281.99	$845.99

TABLE XIII., CONTINUED.

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$240.17

Payments.

Minister at Tyngsborough, Mass.,	$120.81	
Teacher at " "	120.81	
Commission on income credited to University,	6.20	$247.82

Class Funds.

Receipts.

Class of 1834, income of special investment,	$40.00	
" " 1853, " " " "	145.00	$185.00

Payments.

To Secretary of the Class of 1834,	$40.00	
" " " " " " 1853,	145.00	$185.00

Huntington Frothingham Wolcott Fund.

Receipts.

Interest on Fund,	$499.00

Payments.

Treasurer of the Peabody Museum of American Archaeology and Ethnology,	$82.67

John Witt Randall Fund.

Receipts.

Interest on Fund,	$1,510.72

Payments.

Salary of Curator, bookcases, books, and expenses,	$1,487.09

TABLE XIII., CONTINUED.

Sundry Accounts.

Receipts.

Gospel Church Fund (accumulating).			
Interest on Fund,		$209.13	
Robert Troup Paine Fund (accumulating).			
From special investment,		1,739.17	
Charles L. Hancock Bequest, Interest,	$1,468.16		
From special investment,	2,628.82	4,096.98	
Advances to Observatory, from general investments,		1,042.56	
" " Botanic Dept. " " "		5,106.73	
Gains and Losses for General Investments, from gain on R. R. stock sold,		22,878.49	
Price Greenleaf Fund, gain from change of special investment,		9,312.50	
U. A. Boyden Fund, gain from change of special investment,		191.50	
Gore Annuity Fund, interest,		1,294.76	
Lucy Osgood Annuity Fund, interest,		234.48	
George William Sawin Annuity Fund, income of special investment,		120.00	$46,226.30

Payments.

Gore, annuity,	$300.00	
Lucy Osgood, annuity,	420.00	
Henry Willard Williams, annuity,	447.00	
George William Sawin, annuity,	120.00	
Gurney annuities,	1,000.00	
Advances to School of Veterinary Med., repaid in part,	138.78	
Charles L. Hancock Bequest, Legal services and Sundry expenses,	3,775.65	$6,201.43

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments.
Table I.	University,	$249,366.79	$87,200.31
Table II.	College,	459,396.19	443,034.81
Table III.	Library,	56,138.77	50,286.87
Table IV.	Divinity School,	30,830.09	31,850.05
Table V.	Law School,	78,027.42	61,671.69
Table VI.	Medical School,	110,689.85	106,461.61
Table VII.	Dental School,	20,824.21	12,277.11
Table VIII.	Lawrence Scientific School,	39,587.05	40,459.35
Table IX.	Museum of Comparative Zoölogy,	29,188.92	29,390.99
Table X.	Observatory,	49,837.82	69,011.18
Table XI.	Bussey Institution,	12,984.37	12,600.65
	James Arnold Fund,	7,766.89	7,378.55
	Arnold Arboretum,	24,268.86	21,819.58
Table XII.	School of Veterinary Medicine,	24,912.24	24,773.46
Table XIII.	**Bussey Trust,**	20,919.54	20,919.54
	Price Greenleaf Fund,	36,645.77	36,445.77
	Gray Fund for Engravings,	798.25	423.85
	Daniel Williams Fund,	820.76	845.99
	Sarah Winslow Fund,	240.17	247.82
	Class Funds,	185.00	185.00
	Huntington Frothingham Wolcott Fund,	499.00	82.67
	John Witt Randall Fund,	1,510.72	1,487.09
	Sundry Accounts,	46,226.30	6,201.48
		$1,301,664.48	$1,065,055.37
		1,065,055.37	
	Balance,	$236,609.11	

Which is the net increase of the Funds and balances, excluding gifts for capital account, as also shown on page 41.

Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

The committees appointed by the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending July 31, 1893, have, with the assistance of an expert chosen by them, examined and audited the Cash book covering the period from August 1, 1892, to July 31, 1893, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were received by him and on hand at the beginning of said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have carefully examined all notes, bonds, mortgages, and other securities invested during the said year, and are of opinion that all such investments have been judiciously made.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

WILLIAM C. ENDICOTT, JOHN QUINCY ADAMS,	*Committee on the part of the Corporation.*
MOSES WILLIAMS, ROBERT BACON, CHARLES H. PARKER, ISRAEL M. SPELMAN, JACOB C. ROGERS, JOHN L. GARDNER,	*Committee on the part of the Board of Overseers.*

BOSTON, January 4, 1894.

From Harvard University
Febr. 7, '95

ANNUAL REPORTS

OF THE

PRESIDENT AND TREASURER

OF

HARVARD COLLEGE

1893–94

CAMBRIDGE
Published by the University
1895

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PRESIDENT'S REPORT FOR 1893–94.

To the Board of Overseers: —

The President of the University has the honor to submit the following Report for the academic year 1893–94; namely, from September 28th, 1893, to September 27th, 1894: —

John Quincy Adams, a fellow of the Corporation since 1877, died on the 14th of August, 1894, in the sixtieth year of his age. He accepted his election to the Corporation with alacrity, and for seventeen years discharged every duty as a member of the Board with cheerfulness, promptness, and sound judgment. As a member of the finance committee he constantly gave efficient aid to the Treasurer, and used for the benefit of the University his wide knowledge of real estate and other investments. His influence was steadily exerted to free the Corporation from unnecessary routine, to give brevity and point to discussion, and to contribute to the dispatch of business. He commanded confidence within the University, and among its graduates and friends, because he was known to be courageous, wise and firm. His untimely death was a grievous loss to the Corporation, and to the institution.

Henry Warren Torrey, McLean Professor of Ancient and Modern History, *Emeritus*, and a member of the Board of Overseers, died on the 14th of December, 1893, in the eightieth year of his age. His first appointment in the College was as Tutor in History and Instructor in Elocution from 1844 to 1848. In 1856 he was elected to the McLean Professorship, which he held for thirty years, retiring at the age of seventy-two. From 1888 till his death he was a member of the Board of Overseers. Professor Torrey was a life-long student and scholar, modest, retiring, and simple, yet full of ardor, wit, and wisdom. He was in every sense a highly cultivated man, having large stores of knowledge in various fields, and making ready use of all these stores in daily talk and teaching. He was also an interesting and inspiring teacher. But it was chiefly the unconscious influence of his character and manners on his pupils and his colleagues which made his long service to the University precious and memorable. In him were combined gentleness with impetuosity, frankness, sincerity and force with tender regard for the feelings and rights of others, and sweetness with justice. From his life and conversation at Harvard College during forty years has flowed incalculable good.

Hermann August Hagen, Professor of Entomology, died on the 9th of November, 1893, in the seventy-seventh year of his age. Doctor Hagen came to Cambridge in 1867, by invitation of Professor Louis Agassiz, to take charge of the entomological department of the Museum of Comparative Zoölogy, and three years later was appointed Professor in the University. He had practiced medicine for twenty-four years in his native city of Königsberg before he came to America and had already published his Bibliotheca Entomologica. He occasionally gave instruction and guidance to advanced students, but his time was chiefly devoted to the increase and care of the entomological collections, to research, and to the diffusion of information on entomological subjects. His industry was unremitting, his thoroughness exemplary, his simplicity and kindness of heart delightful. Without loving his native country less he loved his adopted country more.

Josiah Parsons Cooke, Erving Professor of Chemistry and Mineralogy, died on the 3rd of September, 1894, in the sixty-seventh year of his age. He was appointed Tutor in mathematics in July, 1849, was authorized to give instruction in chemistry and mineralogy in November, 1849, and was elected Erving Professor in December, 1850, and Director of the Chemical Laboratory in 1879, when that office was first created. He was twenty-one years old when appointed Tutor, and only twenty-three when elected Erving Professor. During his whole active life he labored assiduously to develop the chemical and mineralogical departments of the University, and to promote these sciences. To this end he not only taught unremittingly at the University, but also wrote text-books, delivered popular lectures, collected apparatus and minerals, procured large gifts, made numerous investigations himself and promoted investigation by others. By this varied activity he created the departments of chemistry and mineralogy, out of next to nothing, and gradually built them up. Driven by none of the common necessities, but impelled by a worthy ambition, by love of science and of the intellectual life, and by the desire to be serviceable, he lived a life of persistent and successful labor and expanding influence. He added much to the material equipment of the University; but better still he contributed largely to the broadening of its policy and the enrichment of its instruction.

Frank Bolles, Secretary of the University, died on the 10th of January, 1894, in the thirty-eighth year of his age. He was first appointed in 1886 to the position of Secretary in the office of the Dean of Harvard College; but his functions changed rapidly with the sudden growth of the insitution at that period, and in 1887 he became Secretary of the University. That title was his due; for he served the whole University and not any single department. He was alert, sympathetic, eager, vehement, and loyal. He had a very retentive memory for names, faces, and personal histories; so that he could recall on the instant all the important facts about every young man with whom he had talked or corresponded. In the best sense of the word he was helpful. He worked quickly and accurately, and his rapid pen was serviceable in many ways. His untimely death was a personal grief to many students and young graduates whom he had befriended, and to his associates in the administration of the University. The whole institution has suffered from the sudden ceasing of his zealous and well directed labors on its behalf.

Freeman Snow, Instructor in International Law, died on the 12th of September, 1894, in the fifty-fourth year of his age. Mr. Snow entered College at the age of twenty-eight, having been delayed by poverty, service in the War, and the effects of severe wounds. The resolution and singleness of purpose which he showed in overcoming these obstacles were characteristic of his whole career. He graduated in 1873; but did not enter the service of the College as an instructor till 1880, when he had charge of forensics. In the two following years part of his work was in the Department of History; but in 1883–84 he was again in charge of forensics. In 1886 he was appointed Instructor in International Law, and this appointment he held till his death. He acquired a comprehensive knowledge of History, Diplomacy and International Law, and developed during the last years of his service a growing interest in his subjects among the students. His own mental operations were sound, judicious, and fair. His publications of materials for the study of International Law illustrate his good judgment, sagacity, and independence of thought. His life was singularly serene, his heart tender, his manners kindly, and his personal dignity absolutely impregnable.

Mr. Arthur Leon Giblin, Instructor in Engineering, died July 11th, 1894, in the twenty-eighth year of his age. He graduated at the Rensselaer Polytechnic Institute in 1891 with high distinction, and came to Cambridge as assistant to Professor Burr in October, 1892. He was a young man of pure and upright character, great intelligence and energy, and a quiet resolution which supported him through a three years' struggle with mortal disease. He won the affection and respect of all who were associated with him.

Lists of the resignations and appointments for the year will be found in the Appendix (p. 228).

George Martin Lane resigned the Pope Professorship of Latin, after having served as full professor for forty-three years. To mark their sense of the high value of that service to the University and to classical learning, the Corporation and Overseers immediately elected Professor Lane, Pope Professor of Latin, *Emeritus;* and the Corporation voted to pay him a retiring allowance of $3000 a year during his life. They also requested him to give at his pleasure instruction to such advanced students as he might choose to receive, but without coming under obligation to give instruction during any definite portion of the academic year.

Professor Henry Pickering Bowditch resigned the office of Dean of the Medical Faculty near the beginning of the year, after having filled it with great acceptance for a period of ten years. In the year 1883–84, when Professor Bowditch began his service as Dean, there were 243 medical students; in the year 1893–94 there were 446. In the earlier year the Medical Faculty numbered 22 persons, and the other instructors 30; in the later the Medical Faculty numbered 28, and the other instructors 58. Under the administration of Dr. Bowditch the new building on Boylston Street was occupied, and the laboratory method of teaching was greatly extended and improved. The activity of the School as a centre of medical investigation also grew apace. Near the close of this period the new rule requiring four years of study for the degree of Doctor of Medicine went into effect. The annual receipts and expenses of the School increased by about 75 per cent. between 1883–84 and 1893–94. In every respect the efficiency and influence of the School were rapidly developed.

The statutes of the University were amended during the year 1893–94 in two respects. The 14th statute concerning the duties of the Regent was not adopted by the Overseers until that year, although it had been passed by the Corporation early in 1892–93, as mentioned in the last Report.

The duties of Regent resemble in some respects the duties of the officer formerly called the Registrar; but are more extensive. The supervision exercised by him over the condition and management of all buildings in which five or more students are lodged, or in which students' societies meet, has proved to be valuable, both as regards the sanitary condition of such buildings and the order maintained in them.

The 9th statute was also amended in the last clause but two so as to read: — "There are four grades of the degree of Bachelor of Arts and of the degree of Bachelor of Science, and two grades of the degree of Bachelor of Laws and of the degree of Doctor of Medicine." This change was made in order that the statute might conform to a practice of some years' standing.

After the death of Professor Cooke, the title of the Erving Professorship was changed by vote of the Corporation, consented to by the Overseers. The professorship endowed under the will of William Erving in 1792, received at first the title of the "Erving Professorship of Chemistry and Materia Medica." In 1816, on the appointment of John Gorham, it became the "Erving Professorship of Chemistry," and in 1827, on the appointment of John White Webster, it became the "Erving

Professorship of Chemistry and Mineralogy." For reasons similar to those which caused the detaching of Materia Medica in 1816, the Corporation and Overseers now thought it expedient to detach the subject of Mineralogy; so that the professorship will hereafter bear the title of the Erving Professorship of Chemistry. Mineralogy is a subject having three distinct associations, being connected on one side with Chemistry, on another with Physics, and on a third with Geology; but it should undoubtedly have a professorship of its own. The establishment of this professorship should be effected, so soon as the necessary resources are at hand. One resource is already provided through the zeal, good judgment, and energy of Professor Josiah Parsons Cooke, namely, a large and rich collection of minerals.

On the 13th of November, 1893, the Corporation received from the Society for the Collegiate Instruction of Women — commonly called the "Harvard Annex" — a series of votes which were the result of negotiations carried on during the previous year between the Society and the President and Fellows. These votes declared the desire of the Society to change the name of their corporation to Radcliffe College, and to give degrees in Arts and Sciences, and therefore to apply to the Legislature for the power to confer such degrees. They also declared their purpose to make the President and Fellows of Harvard College the Visitors of the new corporation, and their intention that no instructor or examiner should be appointed, employed or retained by the new corporation without the approval of the Visitors; and they requested that the President of Harvard University be authorized to countersign the diplomas of the new corporation, and to affix to them the seal of Harvard University.

The President and Fellows transmitted to the Board of Overseers a copy of this communication with the statement "that the President and Fellows are prepared to carry out the arrangement proposed thereby, provided that the Board of Overseers shall give its consent." On the 6th of December the consent of the Board of Overseers was given to the proposed arrangement. The Society promptly made application to the Legislature for a change of name and for an extension of its powers, and on the 23d of March a liberal and comprehensive act was signed by the Governor, which accomplished the immediate objects the Society had in view. Radcliffe College is "authorized generally to furnish instruction and the opportunities of collegiate life to women, and to promote their higher education." It "may hold real and personal estate to an amount not exceeding $2,000,000," and it is authorized "to confer on women all honors and degrees, as fully as any university or college in this Commonwealth is now so empowered respecting men or women, provided, however, that no degree shall be conferred by the said Radcliffe College except with the approval of the President and Fellows of Harvard College, given on satisfactory evidence of such qualification as is accepted for the same degree when conferred by Harvard University." By the acceptance of this act the Society for the Collegiate Instruction of Women came into possession of all the powers needed on their part to carry out the agreement with the President and Fellows, and thereupon the alliance between the University and Radcliffe College took effect. Shortly after, the Corporation of Radcliffe College voted to confer the degree of Bachelor of Arts at the end of the current academic year, and thereafter annually, upon such students as shall be found qualified, and requested the President and Fellows of Harvard College to unite with Radcliffe College in adopting a form of diploma for the degree. The form adopted will be found in the Appendix, (p. 237).

While the act concerning Radcliffe College was pending before the Legislature, two petitions on the general subject were addressed to the Board of Overseers, which were referred to a Committee in that Board. On the report of this Committee, and after discussion, the Board passed the following resolutions: —

> "*Resolved*, that in the judgment of the Board of Overseers the degree of Bachelor of Arts should not be given by this University to women, inasmuch as they are not permitted to qualify themselves for it in Harvard College, and at present this form of qualification is implied by the said degree.
>
> "*Resolved*, provided that the President and Fellows concur herein,

that the Faculty of Arts and Sciences be authorized, in their discretion, to admit any students of Radcliffe College to any courses of instruction designed primarily for graduates upon such terms and subject to such limitations and conditions as may be agreed upon between the said Faculty and the corresponding governing body of Radcliffe College, such students not to be deemed students of Harvard University, and the privileges hereby conferred upon them to be at all times revocable, as well by the said Faculty of Arts and Sciences as by the governing boards of the University."

In order to carry out completely the agreement with Radcliffe College, and to warrant the countersigning of its diplomas by the President of the University, the President and Fellows, acting under the advice of the Faculty of Arts and Sciences, took the following measures on the 28th of May: They approved the list of instructors and examiners in Radcliffe College for the year 1894–95, and the list of advanced courses in Harvard University to which competent students of Radcliffe College should be admissible. The instructors and examiners approved were those Harvard teachers who were to give all the instruction and to conduct all the examinations in Radcliffe College proper. The list of advanced courses covered the instruction accessible to students of Radcliffe College under the general vote passed by the Board of Overseers on the 7th of May. At the same time the President and Fellows fixed the fees which should be charged to students of Radcliffe College admitted to University courses, these fees being the same which are charged to students of the University. As a further exercise of the visitatorial power, the President and Fellows approved the list of members of the Faculty of Arts and Sciences of Harvard University who, with the President, Dean and Regent of Radcliffe College, constitute the Academic Board of Radcliffe College for the year 1894–95. These members of the Faculty of Arts and Sciences constitute the Committee of that Faculty on Instruction and Degrees in Radcliffe College. Finally, on the 26th of June, the President and Fellows voted to approve the action of the Council of Radcliffe College in granting the degree of Bachelor of Arts of Radcliffe College to twenty-two women, and the degree of Master of Arts of Radcliffe College to three women, and authorized the President to countersign their diplomas and to affix the seal of Harvard University thereto. These several measures will create precedents for the visitatorial action of the President and Fellows in future years. Taken together they constitute a complete guarantee by Harvard University for all the instruction given, the examinations held, and the degrees conferred by Radcliffe College.

The transactions above described obviously have great importance. In the first place they secure the future of Radcliffe College as an institution where the highest instruction and the most significant degrees will be accessible to women. Secondly, they indicate plainly that the direct influence of Harvard University on the education of women is to be exerted through a separate corporation having invested property and an establishment of its own, and exercising careful supervision over all women who seek instruction in Arts and Sciences from Harvard University teachers. Thirdly, it is obvious that such an alliance as has been made between Harvard University and Radcliffe College could be equally well made by the University with any separate college for men which might be established in Cambridge. As the University increases in numbers and in complexity of life and organization, it may well be that benevolent persons will desire to establish separate colleges for men with dormitories, dining-halls, chapels, laboratories, and reading-rooms of their own, but depending on the University for instruction, examinations, and degrees. For the creation of such detached and partially independent colleges the alliance made between Radcliffe College and Harvard University may in the future serve as precedent and example.

It is desirable to inquire from time to time what part Harvard College makes of Harvard University. The answer to this inquiry must always include two elements; first, the proportion which the number of students in Harvard College bears to the whole number of students in the University, and secondly, the relation of the required period of residence for the degree of Bachelor of Arts to the periods required for the other degrees given by the University. In both these respects the relation of the College to the University has changed within the last fifty years. The percentage of Harvard College students in the whole University has fluctuated as follows: In 1844–45 the percentage of College students was 42. It then gradually rose till it reached 52 per cent in 1849–50. Then it remained in the neighborhood of 50 per cent till 1855–56, when it suddenly rose to 55 per cent. It then declined somewhat, and from 1859 to 1864 it was again in the neighborhood of 50 per cent; but after the Civil War it declined for four years to about 44 per cent. This decline was probably due to the return from the War of young men whose education had been interrupted. They naturally entered the professional schools. In 1868–69 the percentage of College students was again at 50 per cent; but from that limit it rose gradually, during a period of fourteen years, until in 1882–83 it reached 65 per cent. These fourteen years cover most of the changes by which the standards of the professional schools were raised, and the number of their students temporarily reduced. From that maximum it has since steadily declined, until in the year 1894–95 it is again at 50⅔ per cent.

Turning now to the periods of residence, it appears that the normal residence for the degrees of Bachelor of Arts and Bachelor of Divinity has remained constant; that a residence of one year has been required for the degree of Master of Arts since 1872, whereas before that period no residence was required for that degree; that the degrees of Doctor of Philosophy, Doctor of Science, Doctor of Dental Medicine, Doctor of Veterinary Medicine, Bachelor of Agriculture, Civil Engineer, and Mining Engineer have been added at various periods between 1869 and 1886; and that the required term of residence has been increased for the following degrees: for Bachelor of Science, from a variable period averaging about three years to a fixed period of four years; for Bachelor of Laws, from eighteen months to three years; for Doctor of Medicine, from three terms of about four and one-half months each to four full years· It is clear, first, that the number of professional degrees has been greatly increased during the past thirty years, and secondly that the periods of residence for these degrees have been materially lengthened. This lengthening of residence is particularly striking in the case of the two large professional schools — those of Law and of Medicine. On the other hand, it should not be forgotten that the practice of admission to advanced standing in the College has lately increased; so that many degrees of Bachelor of Arts are now conferred every year upon persons who have not completed a residence of four years. This fact more than counterbalances the effect on the other side of the account of the short periods of minimum residence for the degrees of Master of Arts (one year) and Doctor of Philosophy (two years).

It is of course altogether desirable that the percentage of Harvard College students in the total number of students in the whole University should gradually diminish; for the other departments contain maturer, more advanced, and more serious students, and they should be fed by hundreds of institutions besides Harvard College, although that College should always remain their best feeder. To be sure the age of the students of the Scientific School is not higher than the age of the College students; but from one-half to two-thirds of the Scientific students are men who have chosen their profession, and are strenuously preparing themselves for it. Moreover, such trivialities and crudities as still survive in the University naturally harbor in Harvard College; because the College only two generations ago was really a school for young boys. Gradually the influence of a large body of mature and earnest students who have a serious purpose in view is eliminating from the College itself these inconsistent survivals.

A large part of the time of the Faculty of Arts and Sciences was given during the year 1893–94 to discussions which had no issue at the moment, but nevertheless indicated changes of opinion which are likely to take practical shape in the near future.

The Dean calls attention to the extension of the courses in Engineering, and to the institution of a four years' course in Architecture, in which the professional instruction is to be given by an assistant professor, an instructor, and an assistant. While this course is established in the Lawrence Scientific School, and leads to the degree of S.B., it is altogether probable that some of the instruction will ultimately be admitted as qualifying for the degree of A.B. The first course — that on the development of ancient styles — has already been so admitted.

No progress was made during the year on the revision of the requirements for the degrees of Bachelor of Arts and Master of Arts. In the meantime the number of students who obtain the degree of Bachelor of Arts in three years of real residence is increasing, while the number of those who practically fulfil the requirements for the degree in three years and remain in residence a fourth year is also increasing. A larger and larger number of students demonstrate their ability and their desire to perform successfully more than the required number of courses per year. This experience indicates that the period of residence could be reduced without diminishing the scholarly requirements for the degree. The attention of the Overseers is invited to the table on this subject given in the Report of the Dean of the Faculty of Arts and Sciences (p. 76), and to the Dean's discussion of this table.

In spite of five resignations and two deaths in the Faculty of Arts and Sciences, a little larger amount of instruction is offered by that Faculty in the year 1894–95 than was offered in 1893–94. (Dean's Report, p. 70). For the most part, the courses previously offered have been maintained; and the small number of courses actually lost have been replaced by courses in new subjects.

It appears from the statistics given every year in the report of the Dean of Harvard College (p. 83) concerning the results of the admission examinations, that the main facts are singularly constant year after year, making allowance for a gradual increase in the total number of candidates. Of the four plans on which students may gain admission, plan *b*, which calls for Latin and Greek and one Modern Language, remains constantly the most agreeable to the schools and to the candidates. In the present condition of the schools, it is undoubtedly the easiest way to gain admission to Harvard College, and it is the mode most closely resembling that which prevailed before 1887. The relative attractiveness of the several advanced studies is also surprisingly constant.

The administration of the scholarships gives anxiety to the Dean and the Committee charged with it. Complaints are not infrequent, first, that young men get scholarships who do not need them, and secondly, that young men who deserve them and greatly need them do not succeed in winning them. In the attempt to administer these aids considerately and justly the Committee has been compelled to resort to a system of thorough inquiry into the resources of all candidates for scholarships. The blank on which these inquiries are made is printed in full in the Dean's report (pp. 91, 92). It is not surprising that the competition for scholarships is keen; for many of them cover the whole board of a student as well as the tuition-fee. For this reason, young men who possess moral and intellectual force enough to win Harvard scholarships get their education much cheaper than they could get it at any State university or free-tuition college. The question of need is always one of degree, and one which cannot be settled wisely by any fixed and mechanical rule. The Committee must try to get full information, and then use their discretion. Moreover need and good character do not establish any claim to a scholarship, unless accompanied by proved mental capacity. Probably, therefore, some men whose need is not the most extreme will continue to receive scholarships, and some needy and worthy men will continue to fail to get them.

For a second time the Dean of Harvard College deals with the inadequacy of the rooms devoted to the College office. He was fully supported last year in his representations on this subject by a Committee of the Board of Overseers. The necessity of retrenchment which was felt throughout the year 1893–94 prevented any attempt to improve the accommodations of the office; but the urgent need of better quarters is fully recognized. The space devoted to the transaction of College business in University Hall has been trebled within twenty-five years; but the business done there has much more than trebled. One of the chief needs is a larger room for the meetings of the Faculty of Arts and Sciences. If the space in the Hall formerly given to the Chapel could now be made into a Faculty room, that large body would have a dignified and comfortable place of meeting.

The year 1893–94 wrought only one favorable change in the conduct of athletic sports at Harvard College: It was at last made evident to the dullest apprehension that most of the men who took part in the highly competitive sports had been year after year brought to the principal events in a state bordering on exhaustion, with the single exception of the team for track athletics which has always been under the direction of Mr. Lathrop. The employment of a physician to supervise the various crews, from which much gain was expected, led to no good result, the physician prescribing the drugs necessary to procure sleep for the overwrought men, but exercising no influence whatever to prevent them from becoming thus exhausted. This policy of overwork had been pursued by the coaches and captains for years in spite of the steady protests of Dr. Sargent and Mr. Lathrop, both of whom are experts in regard to the physical condition of athletes. The current academic year is witnessing a thorough change in this respect for all the sports.

The evils of the intercollegiate sports, as described in the President's report of last year, continue without real redress or diminution. In particular, the game of foot-ball grows worse and worse as regards foul and violent play, and the number and gravity of the injuries which the players suffer. It has become perfectly clear that the game as now played is unfit for college use. The rules of the game are at present such as to cause inevitably a large number of broken bones, sprains and wrenches, even during trial or practice games played legitimately; and they also permit those who play with reckless violence or with shrewd violations of the rules to gain thereby great advantages. What is called the development of the game has steadily increased its risks, until they have become unjustifiable. Naturally the public is losing faith in the sincerity of the professed desire of coaches, captains and promoters to reform it.

It should be distinctly understood, however, that the players themselves have little real responsibility for the evils of the game. They are swayed by a tyrannical public opinion — partly ignorant, and partly barbarous — to the formation of which graduates and undergraduates, fathers, mothers, and sisters, leaders of society, and the veriest gamblers and rowdies all contribute. The state of mind of the spectators at a hard fought foot-ball match at Springfield, New York, or Philadelphia, cannot but suggest the query how far these assemblages differ at heart from the throngs which enjoy the prize fight, cock fight, or bull fight, or which in other centuries delighted in the sports of the Roman arena. Several fatal accidents have happened this year to school boys and college students on the foot-ball field; and in every strenuous game now played, whether for practice or in an intercollegiate or other competition, there is the ever present liability to death on the field.

It is often said that by employing more men to watch the players, with authority to punish instantly infractions of the rules, foul and vicious playing could be stopped. The sufficient answer to this suggestion is that a game which needs to be so watched is not fit for genuine sportsmen. Moreover, experience indicates that it would be hard to find trustworthy watchers. Extravagant expenditure for the teams throughout the season, and by the spectators at the principal games, continues to disgust the advocates of simple and rational manly sports.

Meanwhile it is to be observed that there is much wholesome physical exercise taken, and much genuine athletic sport enjoyed in the University, in ways wholly independent of these exaggerated intercollegiate games. The variety of the exercises and sports is always increasing. For two years past the class exercises on the floor of the Gymnasium have been very useful; and during the current year military drill has been introduced.

The athletic sports and exercises which commend themselves to sensible teachers and parents are those which can be used moderately and steadily, and which remain available in some measure in mature life. Such are gymnasium exercises, walking, running, rowing, sailing, riding, cycling, tennis, gunning, bowling, and fencing. The youthful expert in any of these sports and exercises will carry into his strenuous professional life a great source of enjoyment, and a real safeguard of health and of the invaluable capacity to endure without injury mental and moral stress. On the other hand, the games which demand so much practice and such severe training that the brain is temporarily dulled for all other use, or which require a combination of many individuals of like powers and tastes, or which contain as essential elements violent personal encounters, can have no direct application in the after life of professional or business men. Moreover, all games which require intense training for short periods present a serious physical and moral danger for the players, — the familiar danger of reaction when training stops. In education, therefore, it is the moderate and long-available exercises and sports which alone have real interest and value. The intense, highly competitive sports afford some stimulus for other and better things; but this stimulus is now too dearly bought.

In the Lawrence Scientific School the most important action taken in the year 1893–94 was the determination to provide a large amount of additional instruction in Mechanical Engineering, Mining Engineering, and Architecture. The additions in Engineering are made in reliance on the increase of tuition-fees; but the additional courses in Architecture are temporarily provided for by the generosity of Mr. James A. Garland of New York City. The first course of instruction in Architecture offered by Harvard University was given in the year under review, by Mr. H. Langford Warren. On the 24th of March the Corporation received a letter from Mr. Garland, "proposing to guarantee the payment of the sum of three thousand dollars a year for the next four College years for the salary of one or more additional instructors in the Department of Architecture." This generous offer was gratefully accepted, and not long after Mr. Warren was promoted to an Assistant Professorship of Architecture for five years from September 1st, 1894, and Mr. John Wheeler Bemis, A.B., was appointed Assistant in Architecture. Mr. George Frederick Newton had previously been appointed Instructor in Designing and Drawing. The Department of Architecture, therefore, entered upon the current academic year with three competent teachers in charge of the professional instruction. It is expected that an appropriate four years' course of instruction will be fully developed in due time; and it is believed that Architecture is as suitable a department of the University as Comparative Literature, Music, or History; and that an accurate knowledge of it, in connection with some knowledge of the other Fine Arts, and of languages, literature, and history, may well be accepted as qualifying for any degree in Arts or Science. The department will require a considerable equipment in drawings, photographs, casts, and books; for it must do two things both of which require ample means of illustration — it must provide for the thorough study first of past architectural monuments, and secondly of successful solutions of modern problems, or, in other words, it must teach the best precedents and then show how to apply them under modern conditions.

The building erected by the late Henry Bromfield Rogers, on the triangular lot between Cambridge Street, Quincy Street, and Broadway, as a gymnasium, was assigned to the Lawrence Scientific School by a vote of the Corporation on the 5th of February, 1894, to be used as a laboratory of mechanical engineering, for which purpose it was very well fitted. The interior has been remodeled under the direction of Professor Hollis, and it now contains spacious and well-lighted drawing rooms, a lecture room, and a good number of machines for experimentation and instruction. The Scientific School has defrayed the cost of preparing the building for these uses and of purchasing the apparatus; but it will not be charged rent for the use of the building.

The Scientific School having decided to make the experiment of offering instruction in the Art of War and Military Tactics beginning with the year 1894–95, the University has availed itself for this purpose of the law (Section 1225 of the Revised Statutes) which permits the President of the United States to detail officers of the Federal Army to teach these subjects in a limited number of schools and colleges. Application having been made in due form through the Secretary of War, Lieut. Wirt Robinson of the Fourth Artillery was detailed near the end of June for this service. During the current academic year he is giving a course of sixty lectures on military science; and he has also organized a military drill, which promises to interest a considerable number of students. For this drill the Government issues the needed arms and equipments.

It is a good sign that the proportion of special students in the Scientific School is decreasing. In 1890–91 and 1891–92 the percentage of special students was 60, in 1892–93 it was 44, in 1893–94 it was 50, and in 1894–95 it is 34.

The Dean of the Scientific School points out in his Report (page 96) that modern universities are well fitted to deal with education in applied science, and that in such universities students of applied science have advantages not otherwise to be obtained. On the other hand, the presence of a considerable number of such students may easily be serviceable to the University; for, as has already been mentioned, they generally bring to their studies an earnest spirit and an urgent motive. They feel themselves to be on the direct road to a professional occupation in which a good preliminary training will tell strongly on the subsequent career.

The Scientific School has shown, during the past eight years, a remarkable capacity for growth; but the departments of education to which its founder devoted it are the most expensive of all departments. Unlike the departments of Theology and Law, they need costly equipment, and a great amount of instruction addressed to the individual rather than to classes. Accordingly, the future of the Scientific School will depend greatly on the amount of endowment with which it is furnished. It cannot have a great expansion without liberal endowment. In 1893–94 there was a general increase of expenditure, covering many items and corresponding with the increase in the number of students, the largest increments being under salaries, services and wages, and improvements. The free balance of the School was reduced on August 1st to $5382.42.

The Report of the Dean of the Graduate School (p. 101) shows in every detail how the Graduate School is steadily gaining strength and solidity. The first table in the Report exhibits plainly the same fact which appears year by year in the choices of study made by the College students, namely, — that the subjects which chiefly engage the attention of students, at the most advanced stages, as well as at the most elementary, are languages, literatures, philosophy, history, and political science. Mathematics and the sciences are relatively neglected. That this fact is constant in an institution where choice of studies is perfectly free indicates the present comparative rarity of capacity and taste for strictly scientific studies. The great majority of students prefer the humanities, winning from them greater profit and greater enjoyment. It is superfluous, therefore, to protect the humanities by artificial prescriptions. The subjects which need fostering, alike in schools and universities, are mathematics, physics, chemistry, botany, zöology, geography, and geology, with all the kindred sciences; for although these subjects are of immense importance to the progress of society, they do not attract an adequate number of students, — partly, perhaps, because they are, with the exception of arithmetic and some small portions of true geography, comparatively new subjects in schools and colleges.

The Dean of the Graduate School, who is properly concerned to maintain the dignity and standing of the degree of Doctor of Philosophy, raises (p. 112) some questions as to the best way of giving the degree of Ph.D. to graduate students of Radcliffe College. He suggests that a distinction might be made, in regard to the education of the sexes together, between graduate and undergraduate work. The important questions to which he refers are under advisement.

The Divinity School enjoyed for the first time the income of the large addition which Mr. Charles L. Hancock made by will to the fund of the Thomas Hancock Professorship, which was founded in 1764. The fundamental principle of the School is that students of theology should not be expected to commit themselves beforehand to any particular opinion, creed, ritual, or form of church government, but should remain free in these respects during the period of professional study. In spite of this unusual constitution, the number of students increases, and they represent an increasing number and variety of colleges, universities and theological seminaries. Conducted as an undenominational school of Protestant Theology, the Harvard Divinity School is larger and more prosperous than it ever was as a Unitarian School. Nevertheless the novel idea that education for the ministry need not be denominational makes its way but slowly against the common opinion to the contrary.

Professor Toy having obtained leave of absence for the year 1894–95, Professor George Foot Moore of Andover Theological

Seminary was appointed Lecturer for that year on the Hebrew Religion and Literature, with Dr. C. C. Torrey of the same seminary as an assistant. This is another instance of an advantageous practice which has grown up in the Divinity School, and might sometimes be adopted with advantage in other departments. A few years since Professor Emerton having obtained leave of absence, Professor A. V. G. Allen of the Episcopal Theological Seminary gave in his place the important course on the History of the Reformation. Professor C. C. Everett being absent during the year 1893–94, Professor John E. Russell, now of Williams College, but formerly of the Yale Divinity School, gave instruction in his place. For several years past Professor Churchill of the Andover Theological Seminary has given valuable instruction in Elocution to the Harvard Divinity students. In all these cases, the employment of professors from other institutions has been highly satisfactory to all concerned; and the general method is certainly one which might be more widely adopted with advantage. It is noteworthy that the Theological Department has been the first one to use it; for it might have been imagined that peculiar difficulties would have environed the method in that department.

A table in the report of the Dean of the Law School, which exhibits the average age at which students have entered the school during the past twenty years (p. 127), is interesting because of the very slight change which has taken place in regard to the average age at admission during this period. The Harvard graduates are still over twenty-three years of age when they enter the Law School, the graduates of other colleges are a little older than the Harvard graduates, and the non-graduates are only from six months to a year younger than the graduates. The figures of this table show how little time the non-graduate has saved by not going to college; but they also show that the average graduate in Arts on admission to the Law School is at least two years older than he ought to be; inasmuch as all young men entering the Law School are still three years distant from the earning of even the most modest livelihood, and most of them are four or five years distant from securing that degree of independence.

The principal change in the organization of the Law School during the year under review was the requirement that every non-graduate in arts or science entering the school should pass the admission examination, whether he intended to be a regular student or a special student. This requirement promptly diminished the number of special students. At the same time another language was added to the requirements of the admission examination. These two restrictive measures reduced the number of special students in the school to twenty-three, the average of the preceding five years being sixty-one. It is probable, however, that the number of special students will increase again after the academic year 1895–96, for thereafter only the graduates of certain specified colleges and persons qualified to enter the Senior Class of Harvard College will be admissible as regular students.

The Law School continues to earn a considerable surplus. It could afford to add to its staff at least one full professor and two instructors, but such additions would alter somewhat the character of the school, for the amount of instruction offered would then be decidedly larger than any one student could possibly avail himself of, and the elective principle would necessarily be introduced to a much larger extent than now. It will be interesting to see what effect on the resort to the school is produced by the regulation that every regular student must have previously obtained an academic degree of good quality. The Divinity School was the first department of the University to adopt this principle, and since it adopted this regulation it has steadily grown and improved; but the Divinity School always has been, and still is, a small school, whereas the Law School has become a large school. If the Law School remain large, in spite of requiring every regular student to hold a good academic degree on admission, it will have made a valuable contribution to the better organization of professional instruction in the United States.

In the Medical School, a change in the admission requirements was decided on during the year under review. After June, 1896, either French or German must be presented for admission in addition to all former requirements. All the professional schools of the University are gradually raising their requirements for admission; but the requirements for admission to all the schools except the Schools of Divinity and Law are still deplorably low. They do not yet approach the requirements for admission to Harvard College. On the other hand, the Law School, as was mentioned in the last Report, requires a subject which is not taught at all in the secondary schools of the United States, namely, Blackstone's Commentaries, and the Medical School requires Descriptive Chemistry and Qualitative Analysis, subjects which are taught in few secondary schools in the United States. There is great need of concerted action throughout the professional departments of this University, and, indeed, throughout all professional schools in the United States, in regard to their requirements for admission. Wherever it is not practicable to demand an academic degree for admission, the requirements for admission should be carefully coördinated with the subjects most frequently and effectively used in the programmes of American secondary schools.

The medical laboratories of bacteriology and pathology developed new activity during the year, in response to the new applications of bacteriology in diagnosis.

The Dental School prospered during the year 1893–94, and has made a further advance in the year now current. The Medical Faculty permitted the Dental Faculty to improve for its uses the old building of the Medical School on North Grove Street; so that good rooms were secured during the past summer for both the operating and the mechanical department. The Dental School is, however, a tenant at will in this building, and it should be provided with a building of its own, expressly designed for its laboratory and infirmary work. The School has been conducted by its Faculty so prudently, and has contributed so much to improve dental education, that it thoroughly deserves adequate endowment, if making the best of small means can establish desert.

The Veterinary School and Hospital continue to make slow but sure progress. The three years' course of graded study, which this School introduced, is being adopted by the other veterinary schools in the United States. The business of the Hospital was unfavorably affected by the general depression in business; but, nevertheless, its earnings were the largest in the history of the department. One great difficulty with which the Hospital has to contend is the inadequacy of its building. Professor Osgood, the surgeon in charge of the Hospital, describes in his report (p. 158), the needs of the Hospital in this respect. A generous gift from two members of the Visiting Committee made it possible to give up the subscription plan, and it is confidently believed that during the current year the wisdom of this change will be financially demonstrated.

Every year makes it plainer that the health and safety of men, women, and children in civilized society is closely bound up with the welfare of the domestic animals. Every year also makes it plainer that a veterinary practitioner needs to be a man of large scientific attainments, excellent powers of observation, and well-trained judgment. To educate competent men thoroughly for this profession is a suitable function for the best universities of the country; but, inasmuch as veterinary education, like all other medical education, requires a costly provision of laboratories and hospitals, there are but two ways in which adequate veterinary schools can be supported. These two ways are by state subsidies and by private endowment. Without either, adequate instruction for the veterinary profession cannot be maintained.

The regular work of the Library in ordering, cataloguing and delivering books goes on with regularity, and the volume of work done steadily increases. Much of it is done, however, under great disadvantages, as has been repeatedly pointed out in these reports. The shelves of the present building have become so crowded, that last spring it proved impossible to find room for the accessions without removing from Gore Hall a large number of the old books. Accordingly 15,000 volumes were boxed and piled up in the cellar of Appleton Chapel, — a humiliating expedient to which the Librarian was simply forced to resort. The same thing will soon have to be done again. No sooner were these books boxed up than some of them were urgently wanted. Gifts and purchases taken together bring into Gore Hall at least 10,000 volumes a year, besides many thousands of pamphlets, and there is now no suitable place to put these acquisitions.

The graduates and friends of the University should look squarely in the face the deplorable facts about the Library, which is the very core of the University considered as a place of instruction, and should have a building foremost among all the University buildings in architectural importance and in just adaptation to its uses. Such buildings Cornell, Pennsylvania, Princeton, Yale, Michigan, Northwestern, and Kansas universities have obtained within the last ten years; and Columbia is preparing to make her library the central feature of the magnificent group of buildings to be erected on her new grounds. The condition of things in Gore Hall is disheartening and mortifying. The reading-room is much too small for the number of readers, is badly lighted, and not ventilated at all; the catalogue and delivery room is unwholesomely crowded all day; and the shelf-room for books is so completely occupied that the proper classification of the books has been arrested with the work half done. The daily work of the Library is all performed at great disadvantage, and in spite of the recent provision of fourteen class-room libraries outside of Gore Hall, the instruction in the advanced courses of some departments is seriously crippled. There is a considerable annual waste of labor, and therefore of money, caused by the scattering of books belonging to the same department, and the lack of proper spaces in which to arrange the accessions in the classes to which they belong. The pressing needs are more stacks for books, enlarged quarters for the public catalogue, a spacious delivery room, and a well-ventilated and well-lighted reading-room capable of accommodating 400 readers.

Eighteen years ago the Corporation, fully realizing the importance of the Library to the development of advanced instruction at Cambridge in all subjects, spent $90,000 out of their very limited unrestricted capital in enlarging the original Gore Hall. The unrestricted funds have never recovered from that abrupt reduction, — on the contrary, they have been still further diminished by occasional annual deficits in excess of annual surpluses. It is impossible for the Corporation to repeat that operation. The whole income of the University from invested funds and from tuition-fees is needed to maintain the present scale of expenditure for salaries, repairs and improvements, general expenses, and the various useful objects to which the incomes of special funds are devoted. Under these circumstances, in the absence of any single benefactor who desires to erect a suitable reading-room and stack, is it not time that the whole body of the alumni and friends of the University should undertake to provide by a general subscription these indispensable means of instruction and research? It is the most comprehensive object for which money can be given to a university; for the Library is needed by every teacher and every student no matter what his department. A well organized effort to raise a large fund for this purpose would have the eager support of every member of the University staff, and of every graduate and friend of the University who loves reading, or who understands how indispensable great collections of books are to the steady advancement of learning and the orderly progress of civilized society.

The report of the Director of the Botanic Garden for 1893–94 mentions the number of out-of-door species cultivated in the Garden, with the distribution of these species between American (1500), European and West Asian (800), and Japanese and Chinese (500). There were besides 400 varieties. In the green houses 2400 species are under cultivation.

He reports also that all the plants in the formal beds and all the decorative plants on and under the terrace, were accurately labelled during the year. The task of keeping a very large collection of this sort labelled is difficult and unending, for labels are very easily displaced.

An anonymous gift to the department of $10,000 for present use enabled the Director to carry on the work of developing the Museum, and to contribute also to the expenses of the Botanic Garden and Herbarium.

The persistent labor of the past six years has brought about results in the Museum which command attention both by their beauty and their usefulness. The Blaschka models of flowers are visited by more persons than any other collection in possession of the University, and apparently with greater delight, while the collection to illustrate economic botany, in which more than 5000 species are now accurately arranged, already interests strongly teachers, students and visitors.

The department provided a course of lectures for Cambridge teachers during the winter and spring; and has also supplied during early summer to Cambridge and Boston public schools such material as could be spared from the Garden.

The summer course in Botany, held at the Botanic Garden for five weeks, continues to be useful to teachers. In the great expansion which the summer courses have undergone at this University and elsewhere, it is agreeable to see that the course in Botany, which was one of the earliest to be established, still prospers, and justifies the foresight of Professor Asa Gray, who first recommended the utilization of the resources of the department for this purpose.

The activity of the Herbarium was well maintained during the year 1893–94, first in collecting, secondly in identifying materials sent in for determination, thirdly in adding to the collection of mounted plants and to the library, fourthly in cataloguing, and finally in continuing the preparation of the "Synoptical Flora." These operations are maintained in part by the endowment of the Herbarium, but in large part by the gifts of friends of the Botanical Department for immediate use. These gifts, though very welcome, constitute but a precarious resource for the maintenance of scientific work which demands not only continuity, but steady enlargement.

Professor Gray's copyrights yielded $3067.44 during the year. The revision of the Field, Forest and Garden Botany has been completed under the direction of Professor Bailey of Cornell University. The new edition will be ready in January, 1895. This book has been for many years one of the most profitable of the series.

In June, 1894, the President and Fellows, upon the urgent request of Professor Charles S. Sargent that more room be given to the Arboretum under his charge, expressed in a formal vote their willingness that about seventy-five acres lying westward from the present Arboretum, and on the other side of

Bussey Street, should be appropriated to the purposes of the Arboretum; provided that a mutually advantageous arrangement could be made with the City of Boston whereby the new area should be laid out and managed like the present Arboretum. In taking this action, however, the Corporation made it a condition that the name of Benjamin Bussey should be permanently connected in some suitable way with the large tract of land which will be devoted to combined park and Arboretum purposes. They felt it to be essential to the proper execution of the trusts they had accepted under the will of Mr. Bussey that his name should be perpetuated in connection with the superb estate which he had the intelligence to select and develop, and the public spirit to devote forever to the promotion of agriculture, horticulture and the arts and sciences connected therewith. No agreement with the City has been reached as yet; but negotiations on the subject have been in progress for several months. The President and Fellows have no desire to extend the agreement of 1882 to the new tract, unless it is indisputably for the interest of the City to do so. There is included in the area under discussion a hill which commands an extensive and delightful prospect.

Under an agreement made during the past summer between the President and Fellows and the Park Commissioners of the City of Boston, the northeastern end of the Plain Field, on which the main building of the Bussey Institution is situated, is to be graded down to the level of the Arbor-Way (which passes to the northeast of the Field on the way from the Arboretum to Franklin Park) in accordance with a plan prepared by the landscape architects of the Commission, and to be executed by the City without expense to the University. The end of the Plain Field was previously an abrupt bluff, the adjoining land having been used as a gravel pit for many years past. This work is already well advanced. The result will be agreeable to the eye, and beneficial both to the Bussey Institution and to the Park System of the City of Boston.

The usefulness and influence of the Arnold Arboretum continue to increase. The two courses of instruction in Dendrology which have lately been given every year by Mr. J. G. Jack, — one in September and November, and the other in May and

June, — are attended by increasing numbers of pupils, chiefly teachers.

The number of visitors to the Arboretum has been much increased by the completion of the approaches to the Arboretum by the Boston Park Commission. The Arboretum now makes part of a drive which thousands of people follow on pleasant afternoons through all the milder weather of the year. The natural woods and the systematic collections attract the attention of the greater part of these visitors chiefly for their beauty, which varies with the succession of the seasons; but there is a considerable number of visitors on foot who visit the Arboretum for study combined with enjoyment.

The interchange of plants and seeds with other botanical and horticultural establishments continues on a considerable scale, the outgo of the Arboretum in this way being always greater than its income, and in some years very much greater.

Additions are also continually made to the Herbarium and the Library, and both of these collections have now a considerable value.

The contract made in 1882 between the City of Boston and the President and Fellows of Harvard College for the joint development of the Arboretum has on the whole given satisfaction to both parties, securing to the population of the City free access to a large and beautifully diversified area devoted to scientific purposes, and enabling the University to prepare and develop the living collections of shrubs and trees more rapidly and effectively than it would have been able to do without the aid of the City.

Upon the death of Professor Cooke, Professor Charles L. Jackson was elected Erving Professor, and was subsequently made Chairman of the Department of Chemistry. Professor Henry B. Hill was at the same time appointed Director of the Chemical Laboratory. This division of labors, which had previously been united in the person of Professor Cooke, was agreeable to both the gentlemen concerned, and promises in some respects a decided increase of efficiency.

The scientific productiveness of the Laboratory was fully maintained during 1893–94, as appears in the report of Professor Jackson, who was appointed Acting Director last spring when Professor Cooke obtained leave of absence for the academic year then ensuing.

Numerous problems confront the new Director. In the first place the number of students, both elementary and advanced, presses closely upon the number of places in the several laboratories. Any further increase in the number of students will necessitate the enlargement of the laboratories. Furthermore, the ventilation of the building has become inadequate, the original plans of Professor Cooke, which were excellent, having been upset by subsequent modifications of the building. The ventilation of the last laboratory added, — namely, the Organic Laboratory, — is very effective, and suggests that a similar system of fans, driven by electric motors, should probably be used for the whole building. The entire staff of the Laboratories is working together with the utmost harmony and efficiency for the advancement of the interests of the department and of the students under its charge.

In the Jefferson Physical Laboratory three graduate students brought investigations to a successful conclusion. All three of the professors were actively engaged in investigation in addition to their work of teaching. Mr. Sabine gave much attention to the invention of laboratory appliances for the course of instruction on light and heat, called Physics 2. This latter work is particularly appropriate to the Jefferson Laboratory, because from that Laboratory has issued a large number of inventions and adaptations of apparatus which were necessary to the introduction of laboratory teaching of Physics into the grammar and high schools. From this department also proceeded the first successful method of testing the attainments of pupils in general Physics, that method, namely, which relies in the case of each pupil on a written examination, a laboratory examination, and the production of his original note-book of experiments performed. This method is applicable in all natural sciences, and is an important contribution to the successful introduction of systematic laboratory instruction in the various sciences into schools and colleges. Without a good method of examination it is difficult to maintain in any subject an adequate standard of accurate and producible knowledge. It used to be said that only the languages and mathematics lent themselves to thorough tests of attainment. This is no longer the case. All the sciences lend themselves to accurate methods of testing, both in school and in college, even at elementary stages of instruction, provided only that a sensible method of testing be used.

The remarkable activity of the Observatory may be best studied in the list of its publications for the year under review (p. 206). They were not only numerous and extensive, but they covered a great variety of subjects, including the zone observations made by Professor Rogers, meteorological observations in considerable variety, photometry, stellar spectra, eclipses, the aspects of Mars and Jupiter, comets, variable stars, a discussion of photographic and visual observations, and descriptions of astronomical apparatus and instruments.

A portion of the work of the Observatory, — namely, the photometric observations made with the meridian photometer, — was criticised last summer by Mr. S. C. Chandler, an astronomer of merit, formerly connected with the Observatory, on the basis of certain errors in the identification or observation of a few very faint variables. The criticism was based on too small a number of exceptional instances; and it has been completely answered by the recent publication of an extensive comparison made at the Potsdam Observatory of the photometric magnitudes obtained at that institution with those of the Harvard Observatory, and of the Uranometria Oxoniensis. The Director of the Observatory exhibits graphically (p. 200) a comparison of the Harvard, Potsdam and Oxford results, showing the relative accuracy of the three bodies of photometric work. The result is completely satisfactory to Harvard University.

The work of the Draper Memorial advances steadily, and constitutes the most striking continuation ever effected of the life work of an eminent scientist.

The work of the Boyden Department, though carried on under peculiar difficulties at the remote station in Peru, continues to yield results of great interest and importance. The Bruce photographic telescope is not yet fully equipped for work; but its efficiency has been demonstrated on the spectra of faint stars.

The endowment of the Museum of Comparative Zoölogy being altogether inadequate, and the demands made upon it by graduate and undergraduate students and their instructors continually increasing, the President and Fellows have from time to time made small contributions to the cost of carrying on the Museum; but these appropriations still leave the Museum in a crippled condition. In the year 1893–94 the President and Fellows voted to contribute $1500 a year, till further notice, toward the extinction of the debt incurred for the extension of the Museum which was completed in 1890–91. The University also contributes $1500 a year toward the cost of fuel and service in the Museum; and it of course pays the salaries of all the officers who give instruction there. Experience has however demonstrated that gentlemen actively engaged in teaching and research cannot be depended on, as a rule, for the daily care and increase of large collections. A separate staff of Museum assistants has to be provided whose time and thought go to the Museum and not to teaching.

The Curator calls attention to another point at which teaching interests and Museum interests clash (p. 215). It is unsafe to allow collections intended for exhibition to be used for purposes of instruction; hence separate collections for purposes of teaching have to be provided and maintained. The departments of Zoölogy and Geology are paying attention to the formation of collections intended as means of instruction. The Mineralogical Department, under the direction of Professor Cooke, has for many years made careful discrimination between specimens on exhibition and specimens which may be used in lectures and laboratories for purposes of demonstration.

Every resource the Museum possesses is applied by the Curator with persistent vigor to the improvement and extension of the collections and to zoölogical research. The annual publications of the Museum continue to be extensive; but it is the personal expenditure of the Curator on his own explorations and investigations which keeps them so.

It is the policy of the Museum to distribute the material it collects among those naturalists who can make the best scientific use of it, no matter where they live or with what institution they may be connected. The admirable results of this policy appear in every report of the Curator.

The Peabody Museum of American Archaeology and Ethnology is in the same condition as most of the great collections belonging to the University, whether of books or other objects. It has many more objects collected than it can adequately study, describe, exhibit, and use to advantage, yet the collecting must go on. In American archaeology, as in many other subjects, the opportunities for collecting instructive materials must be seized as they occur, otherwise they may be lost forever. The building is far too small to hold all the stores already collected; there is little money to pay for the great labor of studying, sorting, mounting, and cataloguing the objects which ought to be exhibited; and even the time of the Curator of the Museum cannot be wholly devoted to it. Under these conditions of inadequate endowment it is a satisfaction to see that the Museum receives year by year substantial aid from generous persons interested in archaeological research. More than $6000 was given to the Museum for immediate use during the year 1893–94.

The Trustees voted on the 3d of May, 1894, to accept the deposit of Mrs. Hemenway's collection pertaining to American archaeology, and particularly to the arts and customs of the Pueblo people, and assigned to it the upper hall in the new part of the Museum. The Trustees of Mrs. Hemenway's estate provide for the installation and classification of this valuable collection.

The Trustees determined in March last to continue the explorations at Copan under the concession secured by the Museum from the government of Honduras; but they have sought the coöperation of other institutions in this costly work.

The Semitic Museum is one of the University collections which greatly interests both students and the public. The Curator, Professor Lyon, has contributed to this result by giving at the Museum lectures illustrated from its most striking materials. It has increased gradually and steadily in value and interest, and it has been the object of repeated gifts. A friend of the Museum makes a standing offer to give $25,000 toward the cost of a building for the Semitic Department, provided $25,000 more be raised. $1000 have been contributed for this purpose, and it is proposed to make an effort, with the strong approval of the Corporation, to raise the remaining $24,000 so soon as the revival of business shall give proper opportunity. The present quarters of the collection in the Peabody Museum are entirely insufficient to exhibit the objects already in hand. It is, moreover, desirable that the library of the Department should be near the collection, and that a lecture-room be provided near both Museum and library.

The Schools Examination Board examined three secondary schools during the year 1893–94 — the Newton High School, the Clinton High School, and the Mount Hermon School, all of Massachusetts. Six University teachers were appointed to examine each one of the schools. The examinations and the reports thereon were thorough and frank, and are believed to have been helpful to the schools examined. The expensiveness of the examinations — a complete examination of a school within a moderate distance of Cambridge costs from $120 to $150 — will limit the work of the Board. In the two years that the Board has been at work, the examination of each school has cost the University nearly $100, on the average, in addition to the charges borne by the school.

The number of students attending the Summer Courses in 1893 fell considerably below the number attending in 1892, being 346 in 1893 against 500 in 1892. This reduction was undoubtedly an effect of the Chicago Fair. In the summer of 1894, the number rose again to 493. Down to 1889, each summer school for one subject or group of subjects was carried on independently by its principal instructor, and the University exercised no general supervision over the schools as a whole, and kept no accounts for them, except for temporary purposes at the Bursar's Office in Cambridge. Since 1888–89, a committee of the Faculty of Arts and Sciences has had general charge of all the courses, and an account has been kept at the Treasurer's Office. The Treasurer's books show that during the past five years there has been received from Summer Schools $44,768, and there has been paid out $43,198. The schools have therefore earned somewhat more than they have cost. It should be remembered, however, that they have had the gratuitous use of the University buildings and equipment, and have profited by the announcements of the schools made in numerous University documents. On the whole, the service rendered to teachers by these schools has been very considerable, and the effect on the University of bringing to Cambridge during the summer for a six weeks' period of hard study hundreds of the most ambitious and competent teachers in the smaller colleges and the secondary schools, has been decidedly beneficial. The University is under obligations to Professor Shaler, Chairman of the Faculty's committee, for the intelligence and vigor with which he has directed this summer work since 1888–89.

During 1893–94, the University provided gratuitously three courses of instruction for teachers in the Cambridge Grammar Schools, one on Experimental Physics, one on English Composition, and one on Botany. The course on Physics has been given two years with success, and the work originally proposed has now been done, so far as the Cambridge Grammar Schools are concerned. In English Composition, the results were less satisfactory, because only a small proportion of the teachers had time and strength to do the amount of writing which was indispensable to the complete utilization of the instruction given.

For several years past the City of Cambridge had been proposing to widen Harvard Street between Bow Street and Harvard Square by taking land from the College Yard. The widening of the street was a desirable and even necessary public improvement, and was fully recognized as such by the University. The President and Fellows had repeatedly said that they were willing to give the land for this purpose, provided that the street should be paved with asphalt from curb to curb, including the strip occupied by the railway tracks. The object of the University in making this proviso was to secure the least noisy pavement possible and the cleanest. At the instance of the City, the Treasurer of the University was authorized, on the 26th of December, 1893, to execute a deed conveying the necessary land to the City of Cambridge, and agreeing to claim no damages, the City undertaking to bear all the expenses of the change, and to lay no betterments on the University property because of the widening. The improvement has since been carried out to the entire satisfaction both of the City and the University. The amount of land given by the University to the City was about 10,370 feet.

Early in the year, a committee of the Corporation was appointed, with full power to agree with the Cambridge Park Commissioners upon the prices at which any or all of the lots belonging to the University on the north bank of Charles River should be conveyed to the Commissioners, the committee to recognize the value to the University as well as to the City of the work the Commission has in hand, and to further that work by all suitable means, and particularly by accepting the existing Assessors' valuations as the prices of any lands which the Commissioners may desire to purchase in general accordance with the plan prepared by their landscape architects. Shortly after the close of the year, an arrangement was consummated with the Commissioners, to the mutual satisfaction of both parties. The land on which the present boat-houses stand makes part of the purchase of the Commissioners; but the University retains the privilege of using these boat-houses for five years, within which time it is hoped that new houses may be built near the Soldier's Field.

Whenever other duties permitted, Mr. Allen Danforth, the Deputy Treasurer, has been investigating in the deeds, the records of probate courts, and the College books, the boundaries, past and present, and the history of all the pieces of land belonging to the University. This long research has not yet been finished; but the Corporation has already been put in possession of complete descriptions and plans or maps of all their lands in Boston, the collection being bound up in a form convenient for reference and preservation. For Cambridge the research is well-advanced but not yet completed. As an incidental and unforseen result of the investigation, the Assessors of Cambridge have discontinued the assessment of taxes on Wadsworth House (a portion not occupied for College uses) and on nearly the whole of the land on which Holyoke House stands; for the reason that these buildings stand on pieces of land which have been clearly shown to have been the property of the College for many years before the annual income of the College from real estate reached five hundred pounds. Such lands are by the charter of 1650, confirmed by the Constitution of the Commonwealth, forever "freed from all civil impositions, taxes, and rates." In an inventory of the whole estate of Harvard College of December 10th, 1654, recorded in the College Book, No. 3, page 41, in the handwriting of Thomas Danforth, who was the Treasurer of the College from 1650 to 1668, there appears "A small piece of land lying before the College, and was formerly the house-lot of Robert Bradish." This lot, except some parts taken for streets, is now covered by Holyoke House. Other records made in 1733, 1770, 1775, and 1779 establish the fact that this lot has been continuously owned and occupied by the College since 1654. These facts had been lost sight of by the Corporation and the City, until the investigations of the Deputy Treasurer brought them to light. The abatement of taxes amounts to about $680.00 a year. A permanent record was made on the 26th of February last of the action of the Assessors, which was based on an elaborate opinion given by the City Solicitor.

After trying for one year the experiment of employing one of the Instructors who is also a physician to visit all students reported sick, the Corporation, on the 5th of February, came to the conclusion that it was expedient to employ an officer for this duty permanently, under the title of Medical Visitor. It was determined, however, that the Visitor should not practice professionally for money among the students of the University. His function is not disciplinary but purely friendly; he is to visit sick students, and to see that they have proper medical attendance, and are in all respects properly cared for. He is particularly charged to see that cases of contagious disease are either removed to hospitals or properly isolated. He is also expected to observe the sanitary condition of the buildings and rooms he visits, although he is not himself to make sanitary inspections. Dr. George W. Fitz was appointed Medical Visitor, having thoroughly commended himself for this function during the experimental period of one year. It is expressly understood that the Medical Visitor is not to interfere with the practice of the resident physicians among the students, and is to exercise no influence either in favor of or against any special school of medicine. He is, however, at liberty to give gratuitous advice about diet, sleep, exercise, and work, to students who ask it of him.

The admission of students to advanced standing in Harvard College in increasing numbers, the admission of special students both to the College and to the Scientific School, and the growth of the Graduate School,—many of whose members spend only one or two years at the University,—have increased the demand for furnished rooms in the vicinity of the University; because a student who expects to stay only one, or at most two years in Cambridge is less willing than one who expects to spend four years to buy a complete set of furniture. None of the rooms belonging to the University are furnished. This condition of things has given rise to a new method of aiding poor students. A few persons interested in the experiment of lending furniture to students have provided 55 complete sets and 22 partial sets of furniture which they loan at a rental of $5.00 a year for a full set. The system has now been tried for several years, and the business result is that the rents cover expenses and repairs, but make no return on the investment. There are always more applications for the furniture than can be met; and since the sets are strong and in good order, they have a good effect on the cleanliness and cheerful aspect of the rooms. At a rent of $8.00 a set there could be a return on the investment and an allowance for renewals. The system is not conducted by the University, but by private persons, and is essentially one of friendly aid.

On the 25th of September, 1894, the President and Fellows received a letter from Mr. Alexander Agassiz, Chairman of a Committee of Graduates on the Equipment of the Soldier's Field, offering to the Corporation, on behalf of that Committee, the "Locker Building," which has been built under its direction on the Soldier's Field, with money subscribed by the graduates of the College. The building contains 1500 well-contrived lockers, and ample bath-rooms and dressing-rooms sufficient for hundreds of men. The number of lockers can be considerably increased, whenever there is need of more. Like the Soldier's Field itself, the building has been placed under the general control of the Committee on the Regulation of Athletic Sports. It is a valuable gift, which will be more and more useful as the various out-of-door sports of the students are successively carried over the river to the Soldier's Field.

In view of the fact that the Soldier's Field was ready for use, and in preparation for the occupation of Perkins Hall, the President and Fellows notified the Committee on Athletic Sports on the 26th of February that it was their wish that all the wooden seats be removed from Jarvis Field by the 1st of August, 1894. The seats have been accordingly removed. The Lawn Tennis Association laid out the larger part of Jarvis Field in tennis courts, the Corporation contributing $650 to the cost of this work, because Perkins Hall and Conant Hall had destroyed some good courts which had been in use for several years. The provision of tennis courts on Jarvis Field is a liberal one, and is likely to be tolerably permanent. It is also an occupation of the Field which is not disturbing to the neighbors; but, on the contrary, is both quiet and cheerful.

After somewhat prolonged discussions, which included a conference between the Directors of the Harvard Dining Association and a Committee of the Corporation, a new organization of the club tables in the Dining Hall was agreed to by the Association. It was agreed that all the tables in Memorial Hall should be conducted as club tables, each club having one-half more members than there are seats at the table, and each club making whatever arrangements might prove necessary to prevent the presence at any one time of more members than there are seats. This plan has been put in operation during the current year, and has proved to be a great improvement on the previous arrangement. Nearly two hours being allowed for each meal, it is found that there is practically no difficulty in avoiding the presence at one time of more members than there are seats. Some of the clubs have voluntarily admitted more than twenty-one members; so that the capacity of the Hall is quite as large as it ever was. The new arrangement has also permitted some improvement in the service; but the service has always been the weak point in Memorial Hall, and a further improvement of it is very desirable.

For twenty years dissected monthly returns have been made to the Directors of the Dining Hall, showing how the weekly price is arrived at, and what the elements of this weekly price are, such as provisions, service, coal, gas, water, interest, and so forth. Of late years the price per week has seldom exceeded four dollars. The system pursued in the Hall is very far from being an economical one; for any member may order as many plates of food and cups of drink as he pleases, and consume as little as he pleases from each plate and cup. There is, consequently, an amount of waste, which no prudent and well-conducted family would tolerate. Nevertheless the monthly returns show (see two samples, App. pp. 238, 239) that hearty young men cannot consume on the average more than $2.65 worth of provisions in a week at present prices, even on this wasteful system.

During the summer vacation the lower story of Foxcroft House was more conveniently arranged for the use of the Foxcroft Club; so that the Club has been enabled to have a larger number of members than ever before, and to provide for them with greater comfort. For this purpose, the Corporation made a small advance of money to the Club. This club continues to provide good food for students at very low prices *à la carte*. At this Club a careful person may get twenty-one sufficient meals a week at a cost not exceeding $2.50. (See sample bill of fare, App. pp. 240, 241.) Some apprehension was felt at first lest this method should prove dangerous to health; but experience has shown that the anticipated evils do not occur.

The safety of the method probably depends first, on the fact that very few young men will economize too much on food when they are not required to pay cash for it, and secondly, on the ease with which inadequate nutrition can be detected. It is only necessary for the experimenter to weigh himself occasionally. This easy test is freely used by sensible students who feel bound to economize. The experience of the Foxcroft Club tends to show that at least 25 per cent of the cost of board in Memorial Hall represents waste caused by the system of ordering as much or as many times as one pleases. In other words, the problem of feeding large numbers of rather heedless young people in a manner at once economical, wholesome, and agreeable, is still far from being solved. A satisfactory solution would greatly promote the higher education, which must ordinarily be obtained away from home.

The prices of rooms in Hollis and Stoughton Halls had long been very low in proportion to the real value of the rooms. Water-closets of the best sort having been placed in the cellars and steam-pipes in the entries, the Corporation felt justified in raising a little the rents of the rooms in these two buildings. In the two buildings taken together they placed the rent of fifteen rooms at $70 each, of thirty rooms at $90 each, of five rooms at $100 each, and of ten rooms at $125 each. These rooms have generally been occupied by two students each.

The new dormitories, Perkins Hall and Conant Hall, were finished in season for occupation at the beginning of the current academic year. It was the wish of Mrs. Perkins that the rents in her hall should be moderate. The Corporation, therefore, fixed the rent of eighteen rooms at $125 each, of sixty rooms at $150 each, and of six rooms at $175 each. In Conant Hall they made the rents somewhat higher, namely, — of three rooms at $125 each, of nine rooms at $200 each, of twenty-eight rooms at $225 each, and of six rooms at $250 each. The rooms in Conant Hall are somewhat larger than they are in Perkins Hall, and each student is provided with two doors between the study and the entry. Both buildings are practically fire-proof, are handsomely but plainly finished in oak, and are provided with the most convenient and cleanly bath-rooms and water-closets.

The entries are heated by steam, but the rooms by open fireplaces only. In both Perkins and Conant Halls, every set of rooms may be occupied by either one or two students, the bedroom being in every instance large enough to receive conveniently two single beds. The gross rent of Perkins Hall will amount to $12,300 a year, and that of Conant Hall to $9,975 a year, but from these sums must be paid the cost of steam-heat, water, and care. Both buildings having cost rather more than the sums realized from the two bequests, their net income must be drawn upon for a time, to repay advances made by the University during their construction.

The President and Fellows having observed that a new practice was arising in regard to the holding of political party meetings in College halls, voted on the 30th of April, "not to allow College halls to be used for political party meetings." This action was taken, not with the design of checking the wholesome discussion of political subjects which goes on at all seasons among the students of the University, but to prevent party meetings being held during periods of excitement, such as often precede national and state elections, for the ordinary purpose of winning votes by means of brief speeches from the political orators of the moment. In short, the vote was intended to prevent the holding of what are called "political rallies" in College halls. The discussion of political and social problems quite apart from the temporary excitement of election periods it was not intended to interfere with. The vote of the Corporation prohibits only party meetings and, of course, applies to all parties.

For three or four years past there had been an increase of disorder on Commencement Day, resulting from the improper use of refreshments provided by the several classes of Alumni in numerous rooms within the College Yard. It had become the practice to invite undergraduates, and even strangers, into the rooms occupied by the younger classes; and after the classes left their rooms to join the procession to the Dining Hall, the rooms were often invaded by disorderly persons having no connection whatever with the University. In order to remedy these abuses, the President and Fellows, on the 5th of February, voted, "That hereafter no punches or distilled liquors shall be allowed in any College room on Class Day or Commencement Day. Every tenant of the College shall be held responsible for the observance of this rule in his own room, and he shall not allow the use of his room on those days by any class secretary, or other person or persons, without the previous written consent of the Bursar of the University, who shall not give his consent in any case until such class secretary or other person or persons shall have filed with him a written agreement that this rule shall be complied with." The several classes having loyally complied with this vote of the Corporation, the observance of Commencement Day on the 27th of June last was the most orderly and agreeable within the memory of any living graduate; and since the disturbances on Commencement Day in former generations — when the day was a public holiday, and a fair was held on Cambridge Common which always required the attendance of the sheriffs of Suffolk and Middlesex with their posses — were much greater than any that have been known to the present generation, it is probably true that the last Commencement Day was the most orderly ever known.

When the academic year 1893–94 opened, the Corporation found themselves in face of a deficit of $25,181.26 in the University, College and Library account, these three departments being really dependent on the College proper. Moreover there had been a deficit of $6,432.88 in this same account for the year 1891–92. The other departments gave no occasion for special anxiety; but it was obviously necessary to curtail expenses in the departments dependent on the College. Salaries could not be reduced either in number or amount; for all engagements with teachers annually appointed had been made in the preceding spring or early summer. Indeed, the total of salaries in the University, College and Library account was larger in 1893–94 than it was in 1892–93 by the sum of $14,687.75. The Corporation immediately addressed themselves to the reduction of expenses, selecting those ways which were least likely to impair the efficiency of the institution. The success with which the needed reduction was effected may be seen in the Treasurer's Statement (page 7). "After adding the income of the Stock Account to its capital to make good in part former deficits, there has been a deficit for 1893–94 of only $518.54." The main items in which the reduction was effected were University expenses, repairs of College edifices, general College expenses, summer schools, and Library expenses. In these items alone the reduction amounted to more than $24,000. In spite of the prevailing depression of business during the year, the income of the University from invested funds declined only very slightly (Treasurer's Statement, p. 6), and there was a considerable increase of tuition-fees. This increase in the College alone amounted to nearly $14,000. The reductions were felt by the instructors in three directions: Most of the appropriations for collections and laboratories were reduced by 20 per cent; the amount of printing done for the benefit of their classes was sensibly reduced; and the amount paid for assistants to instructors, outside the salary list, was diminished by 40 per cent.

For the year 1894–95, the Corporation could look forward to some increase of revenue from the rents of Perkins and Conant Halls, and they also could avoid increasing the salary list. The vacancies that occurred by death or resignation during the year under review were either filled by appointing teachers of lower academic rank, or were only partially filled. The net reduction in the amount of the salary list in the University, College, and Library for the current year will be about $8000, or 2⅛ per cent. No individual's salary has been reduced; and some salaries have been raised, under standing rules, or in acknowledgment of merit and service. The total salary list in these departments, though smaller than in 1893–94, is larger than in 1892–93. In spite of this reduction, the total amount of instruction offered during the current year is a little larger than the total amount of instruction offered in the year 1893–94, as has been already mentioned. A comparison of the lists of teachers for the two years will explain these apparently inconsistent facts in regard to salaries on the one hand and the volume of teaching on the other. In 1894–95 there are in the whole University three professors fewer than in 1893–94, three assistant professors more, four lecturers fewer, five instructors more, and fourteen more demonstrators and assistants. The total number of teachers in the University is larger by fifteen; but on the whole the average grade of the teachers has been a little reduced. During the current year the President and Fellows intend to pursue a frugal policy, and to keep their expenditures in the University, College, and Library account well within their income. At the same time they recognize the fact that the main causes for anxiety which affected prudent managers of great trusts during 1893–94 are now passing away.

Near the close of the year the twenty-fifth anniversary of the beginning of the present administration was celebrated by the Faculty of Arts and Sciences and the Association of the Alumni with expressions of thanks and praise which were addressed to the President, and gave him heartfelt satisfaction, but which belonged as much to many colleagues and associates who have shared with him during that long period the happiness of promoting the elevation, growth, and influence of Harvard University.

The attention of the Overseers is respectfully invited to the following reports on the several departments and scientific establishments.

CHARLES W. ELIOT, *President.*

CAMBRIDGE, 29 December, 1894.

REPORTS OF DEPARTMENTS.

THE FACULTY OF ARTS AND SCIENCES.

To the President of the University:

Sir, — I have the honor to present the following report upon the action of the Faculty of Arts and Sciences for the academic year 1893–94: —

The administrative work under the charge of this Faculty has continued its course with a degree of regularity which gives little occasion for remark. The steady increase in the number of students in this part of the University, which for the last three years has been approximately 200 per year, has of course brought an increase both in the amount and the variety of business to be transacted and questions to be answered by every Administrative Board and every standing committee. This demand for increased labor has been met in part, probably in most cases, by more careful organization of the work of the body concerned; but in part it has necessarily been met by greater demands on the time of individuals. There can be no doubt that, with short-comings best known to those actually engaged, the administrative work of the Faculty is now more and more thoroughly done, year by year, but this is at the expense of a serious diversion of time and thought from the intellectual pursuits which must necessarily hold the first place in the minds of the great body of instructors. This sacrifice of time to the less agreeable duties of a university career is made with general cheerfulness, but the means of restricting the substitution of administrative for scientific interests need careful examination.

The course of the business which is retained by the Faculty itself, and especially the discharge of what may be termed its legislative function, has been less steady and satisfactory. There is increasing difficulty in finding the time for any important debatable subject without increasing the number of meetings for the purpose; and yet every unnecessary meeting of a Faculty consisting of eighty or ninety busy men is felt to be in itself an evil. Some subjects requiring serious and thorough discussion have therefore lingered on the Faculty table, and others, easily to be discerned, are calling for settlement and cannot be long postponed. Some ecomomy of time may perhaps be secured by a more systematic procedure, but for the disposition of any serious question of wide interest it will probably be necessary to call for the devotion of additional time by the whole body.

The work of instruction during the year has not deviated seriously from the scheme laid down in advance, as shown in the annual announcement of 1893, to which reference was made in my last report. The usual list of courses, with the particulars as to the attendance upon each, is now given, omitting, however, in order to save space, all courses which after being announced were for any reason not given in 1893–94. In some cases the courses thus omitted are courses given in alternate years, but as a considerable number of alternating courses are always omitted from the Announcement by the choice of the departments concerned, it did not appear important any longer to carry the statement in this report beyond the actual work of the year. It should also be said that among the courses given under this Faculty are several in the Semitic Languages — two in Philosophy, and two in History, — which are also established as courses in the Divinity School, and are therefore understood to be included in the Report of the Dean of that School.

COURSES OF INSTRUCTION, 1893–94.*

SEMITIC LANGUAGES AND HISTORY.

For Graduates and Undergraduates: —

1. **Professor Lyon.** — Hebrew. — Davidson's Introductory Hebrew Grammar. — Explanation of parts of Genesis and of the Psalm-book. 3 hours.
2 Se., 1 So., 12 Di. Total 15.

6. **Professor Lyon.** — Babylonian-Assyrian History. — Diffusion of the Babylonian-Assyrian culture through the Phoenicians. 1 hour.
10 Se., 6 Jr., 4 So., 1 Sp. Total 21.

12. **Professor Lyon.** — History of Israel, political and social, from the establishment of royalty till the death of Herod the Great. 2 hours.
30 Se., 31 Ju., 41 So., 7 Fr., 4 Sc., 13 Di. Total 126.

16^1. **Professor Toy.** — History of prechristian Hebrew literature. 4 hours. 1st half-year.
6 Se., 1 Ju., 1 So., 7 Di. Total 15.

13. **Professor Toy.** — History of the Hebrew Religion, with comparison of other Semitic Religions. 2 hours.
1 Gr., 2 Se., 9 Di. Total 12.

14. **Professor Toy.** — History of the Spanish Califate. — The Korān. 1 hour.
1 Gr., 13 Se., 8 Jr., 4 So., 1 Sp., 1 Law. Total 28.

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* The classes of students in the several courses are designated as follows: Gr. for Graduate Student, Se. for Senior, Ju. for Junior, So. for Sophomore, Fr. for Freshman, Sp. for Special Student, Sc. for Scientific Student, Di. for Divinity Student, Law for Law Student, Me. for Medical Student.

Primarily for Graduates: —

2. Professor Toy. — Hebrew (second course). — Syntax. — Interpretation of parts of the Prophets and the Poetical Books. 2 hours. 1 Se., 1 Ju. Total 2.

3^1. Professor Lyon. — Classical Aramaic (Syriac). — Grammars of Nestle and Nöldeke. — The Peshitto version of the New Testament. 2 hours. 1st half-year. 2 Se. Total 2.

3^2. Professor Lyon. — Jewish Aramaic. — Kautzsch's Biblisch-Aramäische Grammatik. — Interpretation of parts of Ezra, Daniel, and the Targums. 2 hours. 2 Se. Total 2.

4. Professor Lyon and Mr. Chester. — Assyrian. — Lyon's Assyrian Manual. — Delitzsch's Assyrian Grammar. — Delitzsch's Assyrische Lesestücke. 2 hours. 1 Di. Total 1.

5. Professor Lyon. — Assyrian (second course). — Delitzsch's Assyrian Grammar. — The Chaldean Epic. — Letters and Commercial Documents. 2 hours. 1 Di. Total 1.

7. Professor Toy and Mr. Chester. — Arabic. — Lansing's Grammar. — Nuḫab al-Mulaḥ. — The Thousand and One Nights. 2 hours. 1 Gr. Total 1.

8. Professor Toy. — Arabic (second course). — Wright's Grammar. — The Moallakāt. — Motenebbi. — Ibn Ḫaldun. — The Korān. 2 hours. 1 Gr., 1 Di. Total 2.

9. Professor Toy. — Ethiopic. — Dillmann's Grammatik and Chrestomathia. — Enoch. 1 hour. 1 Gr. Total 1.

Courses of Research.

20*a*. Professor Lyon. — Assyrian Grammar. 1 Gr. Total 1.

20*c*. Professor Toy. — Kitāb al Agāni. 1 Gr. Total 1.

Semitic Seminary. 1 Se. Total 1.

INDO-IRANIAN LANGUAGES.

For Graduates and Undergraduates.

1. Professor Lanman. — Sanskrit. — Sounds and inflexions (Whitney's Grammar). — Elementary composition and translation (Perry's Primer). — Reading of easy prose and verse (Lanman's Reader). 3 hours. 1 Gr., 1 Se., 2 Ju., 2 So. Total 6.

2^1. Professor Lanman. — Sanskrit (second course). — Classical Sanskrit. — Selections from the Pañcatantra and Kathā-Sarit-Sāgara. 3 hours. 1st half-year. 1 Gr., 1 Se., 1 Ju., 1 Di. Total 4.

Primarily for Graduates: —

3^2. Professor Lanman. — Sanskrit (third course). — Introduction to the language and literature of the Vedas. 3 hours. 2d half-year. 1 Gr., 1 Se., 1 Ju. Total 3.

4. Professor Lanman. — Pāli (beginner's course). — Elwell's Jātakas. 2 hours. 1 Gr., 1 Ju. Total 2.

5. Professor Lanman. — Pāli (advanced course). — The Sacred Books of Buddhism. 2 hours. 1 Gr. Total 1.

Course of Research.

20. Professor Lanman. — Special advanced study with practice in the use of the manuscripts. 1 Gr. Total 1.

CLASSICAL PHILOLOGY.

Primarily for Undergraduates: —

1. General introduction to Classical Philology. Lectures by Instructors in the Department. 3 hours. 1st half-year. 3 Se., 1 Ju., 3 So., 1 Fr. Total 8.

GREEK.

INTRODUCTORY LECTURES for students in courses *B*, *C* and *D*.

(1) Professor WRIGHT. — Homer.
(2) Mr. GULICK. — On Lysias and his Times.
(3) Professor GOODWIN. — On Socrates and Plato.
(4) Asst. Professor MORGAN. — On the Greek Theatre and Dramatic Performances.

A. Mr. PARKER and Dr. BATES. — Herodotus (selections). — Homer (selections from Books I.–XII. of the Iliad). — Reading at sight. 3 hours. 3 Se., 3 Ju., 1 So., 12 Fr., 9 Sp. Total 28.

F. Dr. BATES. — Greek Prose Composition (elementary course). 3 hours a fortnight. 3 Ju., 6 So., 13 Fr. Total 22.

B. Asst. Professor MORGAN and Mr. PARKER. — Homer (selections from the Odyssey.) — Lysias (selections). — Plato (Apology and Crito). — Euripides (Medea). — Reading at sight. 3 hours. 4 So., 31 Fr., 1 Sp., 1 Sc. Total 37.

C. Asst. Professor MORGAN and Dr. BATES. — Homer (selections from the Odyssey). — Lysias (selections). — Plato (Apology and Euthyphro). — Euripides (Alcestis). — Reading at sight. 3 hours. 3 Ju., 5 So., 27 Fr. Total 35.

D. Asst. Professor MORGAN. — Homer (selections from the Odyssey). — Lysias (selections). — Plato (Apology, Crito and Euthyphro). — Euripides (Medea; Alcestis). — Reading at sight. 3 hours. 4 So., 44 Fr. Total 48.

E. Dr. BATES. — Greek Prose Composition (second course). — Goodwin's Moods and Tenses. 3 hours a fortnight. 1 Ju., 3 So., 14 Fr. Total 18.

1. Dr. BATES. — Demosthenes (Philippics). — Plato (Protagoras). — Euripides (Iphigenia in Tauris). — Aristophanes (Knights). — Lucian (selections). — Reading at sight. 3 hours. 1 Se., 3 Ju., 4 So., 1 Fr. Total 9.

2. Asst. Professor MORGAN. — Aeschylus (Prometheus Bound). — Sophocles (Oedipus Tyrannus). — Thucydides (Book I.). — Aristophanes (Birds). — Collateral reading of the Acharnians of Aristophanes. — Reading at sight. 3 hours. 1 Se., 2 Ju., 40 So. Total 43.

3. Professor WRIGHT. — Greek Prose Composition (third course). — Translation and original composition. — Oral conversational exercises. 1 hour. 3 Se., 4 Ju., 18 So. Total 25.

LATIN.

INTRODUCTORY LECTURES for students in courses *B*, *C* and *D*.

(1) Professor ALLEN. — Plautus and Terence.
(2) Asst. Professor MORGAN. — The Roman Theatre.
(3) Asst. Professor HOWARD. — The Metrical and Musical Element in Roman Comedy.

A. Mr. **Parker.** — Cicero (selected orations). — Virgil. — Practice in reading at sight. 3 hours. 1 Gr., 7 Se., 2 So., 17 Fr., 11 Sp., 3 Sc. Total 41.

F. Dr. **Walden.** — Latin Composition (elementary course). — Collar's Practical Latin Composition. 3 hours a fortnight.
1 Se., 6 Ju., 3 So., 1 Sp. Total 11.

B. Asst. Professor **Howard** and Dr. **Walden.** — Cicero (De Amicitia). — Livy (Books XXI. and XXII.). — Terence (Adelphoe and Andria). — Reading at sight. 3 hours.
1 Se., 1 Ju., 4 So., 74 Fr., 4 Sp., 2 So. Total 86.

C. Asst. Professor **Howard.** — Cicero (De Amicitia). — Livy (Books I. and II.). — Terence (Phormio and Andria). — Reading at sight. 3 hours.
1 Se., 2 Ju., 3 So., 65 Fr., 6 Sp. Total 77.

D. (*Advanced Course for Freshmen.*) Professors **Greenough** and **Allen** and Mr. **Parker.** — Cicero (De Amicitia). — Livy (Books I. and II.). — Terence (Phormio). — Plautus (Captives). — Reading at sight. 3 hours.
4 So., 44 Fr. Total 48.

E. Dr. **Walden.** — Latin Composition (second course). — Translation of English narrative. 3 hours a fortnight. 1 Ju., 4 So., 11 Fr. Total 16.

1. Professor **Smith.** — Tacitus (selections from the Annals.) — Horace (Odes and Epodes). — Reading at sight. 3 hours. 2 Se., 2 Ju., 42 So. Total 46.

2. Dr. **Howard.** — Tacitus (selections from the Histories). — Horace (Odes and Epodes). — Reading at sight. 3 hours.
1 Gr., 2 Se., 3 Ju., 45 So., 1 Fr. Total 52.

3. Mr. **Parker.** — Latin Composition (third course). — Extended study of Idiom. — Practice in Translation. 1 hour. 4 Se., 3 Ju., 20 So. Total 27.

Primarily for Undergraduates and Graduates: —

Greek.

6. Professor **Wright.** — Demosthenes (On the Crown, with parts of the Embassy). — Aeschines (Against Ctesiphon, selections). — Lycurgus (Against Leocrates). — Aeschylus (Seven against Thebes). — Sophocles (Antigone). — Aristophanes (Frogs). 3 hours. 4 Gr., 6 Se., 16 Ju., 1 So. Total 27.

7. Professor **Wright.** — Greek Prose Composition (fourth course). — Written composition in the style of Demosthenes and of Plato, with studies of classical models. — Translation of selections of standard English (rhetorical and philosophical). 1 hour. 1 Gr., 7 Se., 2 Ju. Total 10.

16. Professor **Wright.** — Sophocles. Part I.: Reading of the Plays and Fragments. Part II.: Miscellaneous topical studies; theses, reports, discussions. 2 hours. 13 Gr., 7 Se., 6 Ju., 1 So. Total 27.

8. Professor **Goodwin.** — Plato (Republic). — Aristotle (Ethics, Books I.–IV. and X.). 3 hours. 10 Gr., 12 Se., 2 Ju. Total 24.

11. Professor **Allen.** — History of Greek Literature. — Lectures, with direction of the student's private reading. 3 hours. 19 Gr., 1 Se. Total 20.

Latin.

6. Professor **Lane.** — Horace (selected Satires and Epistles). — Pliny (selected Letters). — Juvenal (the principal Satires). 3 hours.
5 Gr., 9 Se., 19 Ju., 1 So. Total 34.

14^{2}. Mr. Parker. — Roman Stoicism under the Early Empire. — Seneca (selections). — Persius. — Lectures. 3 hours. 2d half-year.
2 Gr., 4 Se. Total 6.

7. Mr. Parker. — Practice in Latin expression and style. — Study of selections from classical prose as models. — Translation into Latin prose. — Original essays. 1 hour. 3 Gr., 6 Se., 3 Ju. Total 12.

8^{1}. Professor Lane. — Plautus. — Cicero (selections from the rhetorical works). 3 hours. 1st half-year. 2 Gr., 13 Se., 3 Ju. Total 18.

8^{2}. Professor Lane. — Lucretius. 3 hours. 2d half-year.
7 Gr., 15 Se., 10 Ju. Total 32.

10. Professor Greenough. — The Private Life of the Romans, chiefly as illustrated by works of art. — Lectures with collateral reading. 3 hours.
5 Gr., 18 Se., 22 Ju., 21 So., 2 Fr., 2 Sp., 3 Sc. Total 73.

11. Professor Smith. — History of Latin Literature (Poetry). — Lectures, with direction of the student's private reading. 3 hours.
13 Gr., 1 Se., 3 Ju. Total 17.

Primarily for Graduates : —

Seminary. Professors Allen and Smith, directors for 1893-94. — Training in philological criticism and research. — Hesiod (Works and Days) and Tibullus. 3 hours. 11 Gr. Total 11.

25. Asst. Professor Morgan. — Introductory Course in the Text-Criticism and Interpretation of Classical Authors: for 1893–94, Persius. 3 hours a fortnight. 6 Gr. Total 6.

20. Professors Greenough and Lanman. — Greek and Latin Comparative Philology. 3 hours. 5 Gr. Total 5.

22. Professor Lane. — Latin Grammar. — Quintilian (Book I.). — Aulus Gellius. —Latin Inscriptions (Allen's Early Latin Remnants). —Discussions of points of grammar, pronunciation, etc. 1 hour. 4 Gr., 1 Se., 1 Ju. Total 6.

33^{1}. Professor Goodwin. — Pindar. 3 hours. 1st half-year. 8 Gr. Total 8.

23. Professor Goodwin. — Thucydides. 2 hours. 6 Gr. Total 6.

24^{2}. Professor Goodwin. — The Constitutional History of Athens and the Judicial Process of the Athenian Courts. 3 hours. 2d half-year.
10 Gr. Total 10.

32^{1}. Professor Allen. — The Roman Religion and Worship. — Ovid's Fasti. 3 hours. 1st half-year. 9 Gr., 1 Se. Total 10.

ENGLISH.

Primarily for Undergraduates : —

Aa. Professors A. S. Hill and Briggs, and Messrs. Hurlbut, Copeland, Lamont, Fulton and Young. — Rhetoric and English Composition. — A. S. Hill's Rhetoric. — Lectures on Rhetoric and on English Literature. — Written exercises and oral discussions. 3 hours.
6 So., 346 Fr., 65 Sp., 90 Sc. Total 507.

Ab. Professor A. S. Hill. — Rhetoric and English Composition. 3 hours.
1 So., 24 Fr., 1 Sp., 1 Sc. Total 27.

B. Asst. Professor Wendell, and Messrs. Lamont, Gardiner, McCulloch and Young. — Twelve Themes. — Lectures and discussions of themes. 1 hour.
6 Se., 29 Ju., 176 So., 24 Fr., 14 Sp., 36 Sc., 1 Law. Total 286.

C. Messrs. **Baker**, **Caffey**, and **Ware**. — Forensics. — Lectures on Argumentative Composition. — A brief based on a master-piece of argumentative composition. — Five forensics, preceded by briefs. — Discussions of briefs and of forensics. 2 hours.
2 Gr., 78 Se., 283 Ju., 17 So., 14 Sp., 9 Sc., 2 Law, 1 B. Total 401.

F. Mr. **Hurlbut**. — Written exercises and oral discussions. 3 hours.
35 Sc. Total 35.

3^1. Dr. **Garrett**. — Anglo-Saxon. — Bright's Anglo-Saxon Reader. 3 hours. 1st half-year. 11 Gr., 4 Se., 2 Ju., 4 So., 1 Fr. Total 22.

22. Messrs. **Gates**, **Brewster** and **Farley**. — English Composition. 3 hours.
1 Gr., 4 Ju., 173 So., 6 Fr., 13 Sp., 6 Sc. Total 203.

6. Professor **Taussig**, Asst. Professor **Cummings** and Mr. **Hayes**. — Oral Discussion of Topics in History and Economics. 2 hours.
1 Gr., 27 Se., 1 Ju. Total 29.

10. Mr. **Hayes**. — Elocution. 2 hours.
1 Gr., 24 Se., 22 Ju., 7 So., 7 Sp., 2 Sc., 3 Law. Total 66.

For Graduates and Undergraduates: —

1. Professor **Child** and Dr. **Garrett**. — English Literature. — Chaucer. 3 hours. 19 Gr., 8 Se., 5 Ju., 2 So., 1 Sp. Total 35.

2. Professor **Child** and Asst. Professor **Kittredge**. — English Literature. — Shakspere (six plays). 3 hours.
17 Gr., 33 Se., 29 Ju., 24 So., 1 Fr., 7 Sp., 1 Sc. Total 112.

23. Asst. Professor **Wendell**. — English Literature. — The Works of Shakspere. 1 hour. 5 Gr., 4 Se., 3 Ju., 1 Di. Total 13.

11^1. Professor **Child**. — English Literature. — Bacon. 3 hours. 1st half-year.
1 Gr., 9 Se., 2 Ju. Total 12.

11^2. Asst. Professor **Kittredge**. — English Literature, — Milton. 3 hours. 2d half-year. 1 Gr., 10 Se., 6 Ju., 4 So., 4 Fr., 1 Sp. Total 26.

9. Mr. **Gates**. — English Literature. — Prose Writers of the Nineteenth Century. 1 hour. 10 Gr., 45 Se., 72 Ju., 40 So., 12 Sp., 2 Sc. Total 181.

12. Asst. Professor **Wendell** and Messrs. **Gardiner** and **McCulloch**. — English Composition. 2 hours.
11 Gr., 46 Se., 75 Ju., 6 So., 8 Sp., 1 Di., 2 Law. Total 149.

18. Mr. **Baker**. Argumentative Composition. — Eight forensics, preceded by briefs. — Lectures and conferences. 1 hour.
3 Gr., 5 Se., 2 Sp., 1 Law. Total 11.

Primarily for Graduates: —

3^2. Asst. Professor **Kittredge**. — Anglo-Saxon Poetry. — Béowulf. 3 hours. 2d half-year. 17 Gr., 2 Se. Total 19.

25^2. Asst. Professor **Kittredge**. — Anglo-Saxon. — Cædmon. — Cynewulf. — Sweet's Oldest English Texts. 3 hours. 2d half-year. 6 Gr. Total 6.

26^2. Dr. **Garrett**. — Langland and Gower. 3 hours. 2d half-year.
3 Gr. Total 3.

17. Mr. **Baker**. — English Literature of the Elizabethan period. 1 hour.
13 Gr., 2 Se., 1 So., 1 Di. Total 17.

14. Mr. **Baker**. — English Literature. — The Drama from the Miracle Plays to the Closing of the Theatres. 1 hour. 13 Gr., 3 Se., 3 Ju., 1 Sp.. Total 20.

24². Professor A. S. Hill.— The Poetry of Wordsworth, Coleridge, Scott, Byron, Shelley, Keats, Tennyson, and Browning. 2 hours. 2d half-year.
7 Gr., 9 Se., 1 So., 3 Sp. Total 20.

5¹. Professor A. S. Hill. — English Composition (advanced course). 3 hours. 1st half-year. 10 Gr., 8 Se. Total 18.

Course of Research.

20a. Mr. Gates. — English Literature in its relation to German Literature, from 1790 to 1830. 1 hour. 1 Se. Total 1.

GERMAN.

Primarily for Undergraduates : —

A. Asst. Professor Schilling, Mr. Nichols, Dr. Poll, Dr. Bierwirth, and Mr. Calkins. — Elementary Course. — Grammar. — Translation from German into English, and elementary exercises in translating into German. 3 hours. 1 Gr., 8 Se., 3 Ju., 14 So., 142 Fr., 19 Sp., 64 Sc. Total 251.

B. Dr. Poll. — Elementary Course. — Grammar. — Composition. — Translation and reading at sight. — Selections in Prose and Poetry. 5 hours.
1 So., 21 Fr., 6 Sp. Total 28.

C. Assoc. Professor Bartlett and Dr. Bierwirth. — Intermediate Course. — Grammar. — Composition. — Translation and reading at sight. — Selections from the writers of the Eighteenth and Nineteenth Centuries. 3 hours.
1 Gr., 1 Se., 9 So., 79 Fr., 2 Sp., 5 Sc. Total 97.

1*a*. Asst. Professor von Jagemann. — German Prose and Poetry. — Selections from Lessing, Schiller, and Goethe. — Lyrics and Ballads. — Modern Historical and Narrative Prose. — Composition. — Reading at sight. 3 hours.
1 Se., 2 Ju., 35 So., 10 Fr., 3 Sp., 1 Sc. Total 52.

1*b*. Mr. Nichols. — German Prose. — Subjects in History and Biography. — Composition. — Reading at sight. 3 hours.
2 Se., 3 Ju., 38 So., 16 Fr., 2 Sp., 5 Sc. Total 66.

1*c*. Dr. Robinson. — German Prose. — Subjects in Natural Science. — Reading at sight. 3 hours. 1 Gr., 2 Ju., 13 So., 6 Fr., 16 Sc. Total 38.

E. Mr. Nichols. — German Grammar and practice in writing German (first course). 1 hour. 1 Se., 3 Ju., 9 So., 6 Fr., 1 Sp., 1 Sc. Total 21.

F. Dr. Bierwirth. — German Grammar and practice in writing German (second course). 1 hour. 1 Se., 3 Ju., 7 So., 4 Fr. Total 15.

G. Asst. Professor Schilling. — German Grammar and Practice in writing German (third course.) 1 hour. 1 Se., 3 Ju., 2 So., 1 Sp. Total 7.

6. Mr. Nichols. — German Prose (advanced course). — Subjects in History, Literature and Philosophy. — Reading at sight. 3 hours.
2 Se., 4 Ju., 8 So., 7 Fr., 1 Sp. Total 22.

2. Dr. Poll. — Lessing and the German Drama. — Practice in writing German. 3 hours. 1 Se., 6 Ju., 10 So., 14 Fr., 2 Sp. Total 33.

3. Asst. Professor Schilling. — Schiller and his Contemporaries. — Practice in writing German. 3 hours.
1 Gr., 2 Se., 17 Ju., 19 So., 10 Fr., 1 Sp., 1 Sc. Total 51.

4. Asst. Professor Francke — Goethe and the Romantic School. — Practice in writing German. 3 hours. 7 Se., 24 Ju., 21 So., 12 Fr., 4 Sp. Total 68.

For Graduates and Undergraduates: —

5. Asst. Professor **Francke**. — General History of German Literature; the Classic Periods of the Twelfth and Eighteenth Centuries. — Lectures, with collateral reading. 3 hours.
3 Gr., 9 Se., 24 Ju., 5 So., 1 Fr., 1 Sp., 1 Sc. Total 44.

8. Asst. Professor **von Jagemann**. — German Literature in the Twelfth and Thirteenth Centuries. — Nibelungenlied. — Kudrun. — Hartmann's Iwein. — Wolfram's Parzival. — Walther von der Vogelweide. — Translation into Modern German. — Lectures and theses. 3 hours.
2 Gr., 2 Se., 1 So. Total 5.

9[1]. Asst. Professor **Francke**. — German Literature and Art during the Era of the Reformation. — Luther. — The Humanists. — Hans Sachs. — Holbein. — Dürer. — Lectures, reading, and theses. 3 hours. 1st half-year.
1 Gr., 5 Se., 3 Ju., 2 So. Total 11.

11[2]. Asst. Professor **Francke**. — The political tendencies in German Literature of the Nineteenth Century. — Heine, Gutzkow, Freiligrath. — The Struggle for National Consolidation. — Lectures, reading, and theses. 3 hours. 2d half-year. 3 Gr., 1 Se., 1 Ju., 2 So. Total 7.

GERMANIC PHILOLOGY.

Primarily for Graduates: —

12[1]. Asst. Professor **von Jagemann**. — Gothic. Introduction to the study of Germanic Philology. 3 hours. 1st half-year. 9 Gr. Total 9.

13. Asst. Professor **Kittredge** and Dr. **Garrett**. — Icelandic (Old Norse). — Selections from the Sagas and the Elder Edda. 3 hours.
7 Gr., 1 Ju. Total 8.

15[1]. Asst. Professor **von Jagemann**. — History of the German Language to A.D. 1100. — Old High German. 3 hours. 1st half-year. 3 Gr., 1 Se. Total 4.

17[2]. Asst. Professor **von Jagemann**. — History of the German Language since A.D. 1100. — Middle High German. — Modern German. 3 hours. 2d half-year. 2 Gr., 1 Se. Total 3.

19. Asst. Professor **Francke**. — The History of the Faust legend. 1 hour.
2 Gr., 3 Se. Total 5.

20c. Asst. Professor **Francke**. — The Seminary. 1 Se. Total 1.

FRENCH.

Primarily for Undergraduates: —

A. Mr. **Henckels**. — Elementary course. — French Prose and Composition. 2 hours.
3 Gr., 9 Se., 1 Ju., 5 So., 44 Fr., 21 Sp., 32 Sc., 1 Law. Total 121.

1a. Asst. Professor **de Sumichrast**, Dr. **Marcou**, Mr. **Henckels**, and Mr. **Page**. — Grammar, reading, and composition. — Dumas. — About. — George Sand. — Sandeau. — La Fontaine. 3 hours.
3 Se., 3 Ju., 38 So., 114 Fr., 20 Sp., 5 Sc. Total 183.

1*b*. Asst. Professor Sanderson. — Reading at sight of French Prose. — Grammar. — Translation from French to English and from English to French. 3 hours.
8 Se., 8 Ju., 18 So., 27 Fr., 8 Sp., 22 Sc., 1 Di., 1 Law. Total 93.

2. Asst. Professor Sanderson. — French Prose and Poetry. — La Fontaine. — Corneille. — Racine. — Molière. — Beaumarchais. — Alfred de Musset. — Balzac. — Historical Grammar. — Composition. 3 hours.
7 Se., 26 Ju., 88 So., 72 Fr., 9 Sp., 4 Sc., 1 Law. Total 207.

3. Mr. Brun. — Practice in writing and speaking French (elementary course). 2 hours. 3 Se., 15 Ju., 35 So., 13 Fr., 3 Sp., 2 Sc. Total 71.

4. Mr. Brun. — Practice in writing and speaking French (intermediate course). 2 hours. 1 Gr., 8 Se., 15 Ju., 24 So., 12 Fr., 2 Sp., 3 Sc., 1 Law. Total 66.

5. Asst. Professor Sanderson. — Practice in writing and speaking French (advanced course). — Oral discussions. 2 hours.
4 Se., 11 Ju., 10 So., 2 Fr., 3 Sp., 1 Law. Total 31.

14. Professor Bôcher. — Difficult Modern French. — Reading and Translation. 2 hours. 1 Gr., 21 Se., 27 Ju., 25 So., 5 Fr., 4 Sp., 2 Sc. Total 85.

For Graduates and Undergraduates: —

6. Professor Bôcher and Asst. Professor de Sumichrast. — General view of French Literature, from its origins to the present day. — Lectures, reading, and themes. 3 hours.
1 Gr., 16 Se., 40 Ju., 35 So., 7 Fr., 3 Sp., 1 Sc. Total 103.

7. Asst. Professor de Sumichrast. — French Literature in the Nineteenth Century. — Lectures, themes, and collateral reading. 3 hours.
1 Gr., 23 Se., 30 Ju., 6 So., 2 Sp., 1 Sc. Total 63.

9. Professor Bôcher and Mr. Brun — French Literature in the Seventeenth Century. — Lectures, themes, and collateral reading. 3 hours.
6 Se., 9 Ju., 4 So., 2 Sp., 1 Sc. Total 22.

Primarily for Graduates: —

11. Dr. Marcou. — French Literature from the Thirteenth to the end of the Fifteenth Century. — Lectures, themes, and collateral reading. 3 hours.
2 Se., 4 Ju. Total 6.

Course of Research.

20. Asst. Professor de Sumichrast.
1 Gr., 1 Se. Total 2.

ITALIAN.

Primarily for Undergraduates: —

1. Asst. Professor Sheldon. — Elements of Grammar. — Selections from modern authors. — Elementary exercises in writing Italian. 3 hours.
2 Gr., 14 Se., 21 Ju., 5 So., 11 Fr., 3 Sp. Total 56.

2. Asst. Professor Marsh. — Literature of the Fifteenth and Sixteenth Centuries. — Torquato Tasso. — Ariosto. — Machiavelli. — Pulci. — Reading at sight. — Syntax and prose composition, with reading of modern texts. 3 hours. 1 Gr., 2 Ju., 1 Fr. Total 4.

Primarily for Graduates: —

4. Asst. Professor Marsh. — Literature and the Fine Arts in Italy during the Middle Ages and the Renaissance, with special study of Dante. 3 hours.
2 Gr., 5 Se., 1 Ju. Total 8.

SPANISH.

Primarily for Undergraduates: —

1*a*. Professors **Nash**. — Grammar, reading, and composition. — Gil Blas. — El Eco de Madrid. 3 hours. 3 Se., 4 Ju., 12 So., 14 Fr., 1 Sp. Total 34.

1*b*. Dr. **Marcou**. — Elements of Grammar. — Reading of simple modern Spanish. — Elementary exercises in writing Spanish. — Simple conversation. 3 hours. 3 Gr., 10 Se., 7 Ju., 10 So., 5 Fr., 1 Sp., 1 Sc., 2 Law. Total 39.

2. Professor **Nash**. — Modern Literature (novels, plays, etc.). — Reading at sight. — Advanced Grammar (Syntax). — Conversation. — Prose composition. 3 hours. 3 Se., 3 Ju., 4 So., 1 Sp. Total 11.

Primarily for Graduates: —

3. Professor **Nash**. — Literature of the Sixteenth and Seventeenth Centuries (selections from Calderon, Lope de Vega, and Cervantes). — Early Spanish (the Poem of the Cid). — Outline of the History of Spanish Literature (lectures, with collateral reading). 3 hours. 2 Se., 1 Ju., 1 Sp. Total 4.

ROMANCE PHILOLOGY.

Primarily for Graduates: —

2. Asst. Professor **Sheldon**. — Phonetics, with special reference to the explanation of sound-changes in the Romance languages. 2 hours. 2d half-year. 2 Gr., 1 Se., 1 Ju. Total 4.

3. Asst. Professor **Sheldon**. — Old French. — Phonology and Inflexions. — The oldest texts. — La Chanson de Roland. — Joinville. — Chrétien de Troies. — Aucassin et Nicolette. 3 hours. 13 Gr. Total 13.

4. Dr. **Marcou**. — Provençal. — Language and Literature, with selections from the poetry of the Troubadours. 2 hours. 1 Gr. Total 1.

5[1]. Asst. Professor **Sheldon**. — Low Latin. 2 hours. 1st half-year. 1 Se. Total 1.

7. Asst. Professor **Sheldon**. — The French Element in English. 2 hours. 1 Gr. Total 1.

COURSE OF RESEARCH.

20. Asst. Professor **Sheldon**. 1 Gr. Total 1.

COMPARATIVE LITERATURE.

For Graduates and Undergraduates: —

1. Asst. Professor **Marsh**. — The History of Classical Learning in Europe from the Fifth to the Fifteenth Century, considered with regard to the relation of modern culture and education to Classical Literature. — Lectures and theses. 2 hours. 3 Se., 2 Jn. Total 5.

Primarily for Graduates: —

21[1]. Asst. Professor **Marsh**. — The Origin and Development of Historical Epic Poetry in Mediaeval Europe. 3 hours. 1st half-year. 1 Ju. Total 1.

22[2]. Asst. Professor **Marsh**. — The Legendary and Poetic Material of Celtic Origin and its treatment in the Narrative Poetry of the Middle Ages. 3 hours. 2d half-year. 1 Ju. Total 1.

PHILOSOPHY.

Primarily for Undergraduates: —

INTRODUCTORY COURSES.

1*a*. Professor PALMER and Dr. SANTAYANA. — General Introduction to Philosophy. — Logic, Psychology, Metaphysics, and History of Philosophy. 3 hours.
2 Gr., 35 Se., 71 Ju., 59 So., 4 Fr., 22 Sp., 6 Sc., 1 Di. Total 200.

1*b*. Professor ROYCE. — General Introduction to Philosophy. — History of the Principal Philosophical Problems and Theories. — Logic. — Problems of Psychology and Ethics. 3 hours.
1 Gr., 14 Se., 35 Ju., 13 So., 1 Fr., 5 Sp., 9 Sc., 2 Di., 1 Law. Total 81.

For Graduates and Undergraduates: —

SYSTEMATIC COURSES.

2. Professors JAMES and MÜNSTERBERG. — 1st half-year: Lectures, theses and experiments. 2d half-year: Demonstrations and Exercises in the Laboratory. 3 hours. 6 Gr., 17 Se., 10 Ju., 4 Sp., 3 Sc., 2 Di. Total 42.

3. Professor ROYCE. — Cosmology. — The fundamental conceptions of Natural Science, with special reference to thories of Evolution and Materialism. — Lectures and theses. 3 hours. 7 Gr., 15 Se., 11 Ju., 3 Sp., 6 Di. Total 42.

4. Professor PALMER. — Ethics. — The Theory of Morals, considered constructively. — Lectures, theses, and private reading. 3 hours.
10 Gr., 22 Se., 7 Ju., 1 So., 5 Sp., 2 Di. Total 47.

5. Professor PEABODY. — The Ethics of the Social Questions. — The questions of Charity, Divorce, the Indians, Temperance, and the various phases of the Labor Question, as problems of practical Ethics. — Lectures, essays, and practical observations. 2 hours.
6 Gr., 56 Se., 23 Ju., 2 So., 9 Sp., 3 Sc., 19 Di. Total 118.

8. Dr. SANTAYANA. — Aesthetics. — The Psychology of Taste and the History of Aesthetic Theories. — Lectures, theses, and private reading. 3 hours. 1st half-year. 3 Gr., 10 Se., 8 Ju., 1 Law. Total 22.

HISTORICAL COURSES.

10[1]. Dr. SANTAYANA. — Descartes, Spinoza, and Leibnitz. — Lectures, private reading, and discussion. 3 hours. 1st half-year.
2 Gr., 4 Se., 3 Ju., 1 So., 2 Sp., 1 Di., 1 Law. Total 14.

11. Professor ROYCE. — The History of Psychological Theory from Locke to Wundt. — The development of the Association Psychology. — Lectures and theses. 2 hours. 6 Gr., 5 Se., 2 Di. Total 13.

14. Professor PEABODY. — The Philosophy of Religion; its rise, problem, and results. — Pfleiderer's Philosophy of Religion. — Caird's Philosophy of Religion. — Lectures and a thesis. 1 hour.
2 Gr., 5 Se., 2 Ju., 2 Sp., 25 Di. Total 36.

Primarily for Graduates: —

COURSES OF RESEARCH.

20*a*. Professor MÜNSTERBERG. — Psychological Laboratory. — Laboratory exercises, and special investigations for advanced students.
9 Gr., 2 Se., 1 Ju. Total 12.

20*b*. Professor **James**. Psychological Seminary. — Questions in Mental Pathology. 2 hours. 8 Gr., 1 Ju., 1 Di., 1 M. Total 11.

20*c*. Professor **Royce**. — Metaphysical Seminary. — Subject for the year: The Development of the Hegelian System. — Lectures, papers, and original research. 2 hours. 8 Gr., 1 Ju., 1 Di. Total 10.

20*d*. Professor **Palmer**. — Ethical Seminary. — The Comparison of Ethical Ideals. 2 hours. 7 Gr., 1 Se. Total 8.

20*e*. Dr. **Santayana**. — Studies in Scholastic Philosophy. 2 hours. 2 Gr., 1 Di. Total 3.

Courses on Education and Teaching.

For Graduates and Undergraduates: —

16. Asst. Professor **Hanus**. — The History of Educational Theories and Practices — Lectures, recitations, and a thesis. 2 hours. 3 Gr., 1 Se., 1 Ju., 2 Sp., 1 Sc. Total 8.

9. Asst. Professor **Hanus**. — Educational Theory. — Study of topics. — Lectures, reports, and discussion. 1 hour. 1 Gr. 1 Sp., 1 Di. Total 3.

Primarily for Graduates.

17. Asst. Professor **Hanus**. — Organization and Management of Public Schools and Academies. — Supervision, Courses of Study, and Instruction. — Lectures, discussions, and reports. 2 hours. 2 Gr., 1 Se., 1 Sp. Total 4.

20*f*. Asst. Professor **Hanus**. Pedagogical Seminary. — Curriculum of the Secondary School. Lectures, essays, reports, and discussions. 9 Gr. Total 9.

HISTORY AND POLITICAL SCIENCE.

History.

Primarily for Undergraduates: —

1. Asst. Professor **Channing** and Dr. **Coolidge**. — Mediaeval and Modern European History (introductory course). 3 hours. 1 Ju., 63 So., 247 Fr., 34 Sp., 18 Sc., 1 Law. Total 364.

4². Professor **Emerton**. — The Middle Ages, from Charlemagne to Dante. — Formation of the European States. — The Holy Roman Empire. — The Roman Papacy as the controlling force in European life. 3 hours. 2d half-year. 1 Gr., 8 Se., 21 Ju., 35 So., 1 Fr., 4 Sp., 1 Sc., 14 Di. Total 85.

For Graduates and Undergraduates: —

6. Professor **Emerton**. — The First eight Christian centuries. — The Conflict of Christianity with Paganism. — Origin and development of the Roman Primacy to its Alliance with the Frankish State. — The Germanic nations as the basis of a new Christian civilization. 2 hours. 10 Gr., 8 Se., 8 Ju., 7 So., 14 Di. Total 47.

8. Asst. Professor **Gross**. — History of France to the reign of Louis XIV. 3 hours. 3 Gr., 15 Se., 3 Ju., 1 Fr. Total 22.

9. Asst. Professor **Gross**. — Constitutional History of England to the Sixteenth Century. 3 hours. 10 Gr., 10 Ju., 20 Se., 7 So., 2 Sp. Total 49.

11. Mr. **Bendelari.** — European History during the Seventeenth Century and the first half of the Eighteenth. — Constitutional History of England during the Stuart Period. 3 hours.
6 Gr., 22 Se., 16 Ju., 11 So., 2 Sp., 2 Sc. Total 59.

12[1]. Professor **Macvane** and Dr. **Coolidge.** — History of Continental Europe since the Middle of the Eighteenth Century. — 3 hours. 1st half-year.
5 Gr., 44 Se., 49 Ju., 55 So., 3 Fr., 15 Sp., 2 Sc. Total 173.

12[2]. Professor **Macvane** and Asst. Professor **Channing.** — Constitutional History of England since the reign of George II. 3 hours. 2d half-year.
3 Gr., 24 Se., 49 Ju., 66 So., 8 Fr., 15 Sp., 4 Sc. Total 169.

10. Asst. Professor **Channing.** — American History (to 1783). 3 hours.
5 Gr., 25 Se., 58 Ju., 81 So., 8 Fr., 11 Sp., 3 Sc. Total 191.

13. Mr. **Conant.** — Constitutional and Political History of the United States (1783–1865). 3 hours.
4 Gr., 38 Se., 52 Ju., 18 So., 8 Sp., 4 Sc., 1 Law. Total 125.

14. Dr. **Snow.** — History of American Diplomacy. 3 hours.
2 Gr., 46 Se., 18 Ju., 9 So., 3 Fr., 2 Sp., 4 Sc. Total 84.

Primarily for Graduates: —

22. Asst. Professor **Gross.** — The Sources and Literature of English Constitutional History. 1 hour. 2 Gr., 1 Se. Total 3.

24[1]. Mr. **Bendelari.** — Technical Aids to the study of History: Chronology, Diplomatics, Palaeography, etc. 2 hours. 1st half-year. 1 Gr. Total 1.

25[2]. Mr. **Bendelari.** — The Elements of Latin Palaeography. — Practical Exercises in reading historical mediaeval texts. 1 hour. 2d half-year.
2 Se., 2 Ju. Total 4.

COURSES OF RESEARCH.

20. I. Seminary in Mediaeval History.
(*a*) Professor **Emerton.** — Church and State. 1 Gr., 1 Se. Total 2.
II. Seminary in Modern History and Diplomacy.
(*d*) Professor **Macvane.** — Recent Constitutional History.
1 Gr., 3 Se. Total 4.
(*f*) Dr. **Snow.** — Diplomatic History. 1 Gr., 1 Se., 1 Ju. Total 3.
III. Asst. Professor **Channing.** — Seminary in American History and Institutions. 14 Gr., 2 Se. Total 16.

GOVERNMENT AND LAW.

Primarily for Undergraduates: —

1[1]. Professor **Macvane.** — Constitutional Government (elementary course). 3 hours. 1st half-year.
2 Se., 45 Ju., 146 So., 96 Fr., 40 Sp., 8 Sc., 1 Law. Total 338.

For Graduates and Undergraduates: —

4. Dr. **Snow.** — Elements of International Law and the History of European Diplomacy. 3 hours. 37 Se., 24 Ju., 5 So., 3 Sp., 1 Sc. Total 70.

5. Mr. **Williams.** — History and Institutes of Roman Law. — Institutes of Justinian, including the Law of Inheritance, and Selections from the Institutes of Gaius. 3 hours. 15 Se., 18 Ju., 4 Sp. Total 37.

7[2]. Professor **Macvane**. — Leading principles of Constitutional Law. — Selected cases, American and English. 3 hours. 2d half-year.
4 Gr., 15 Se., 19 Ju., 15 So., 3 Fr., 6 Sp., 2 Sc. Total 64.

9[1]. Mr. **Williams**. — Roman Law. — The Law of Inheritance. — Institutes of Justinian and Gaius, and Selections from the Corpus Juris. 3 hours. 1st half-year. 4 Se., 1 Ju., 1 Law. Total 6.

17. Mr. **Conant**. — The Principles of the Common Law. — Rights and their Enforcement. — Torts. — Municipal corporations. 3 hours.
6 Gr., 30 Se., 11 Ju., 1 Fr., 5 Sp., 1 Law. Total 54.

Primarily for Graduates: —

10. Professor **Macvane**. — Principles of Government: Selections from leading writers, and studies in the existing political systems of Europe. 2 hours.
4 Gr., 4 Se. Total 8.

11. Asst. Professor **Channing**. — History of Political Theories, with especial reference to the origin of American Institutions. — Studies from Machiavelli, Calvin, Hobbes, the Puritan state papers, Winthrop, Locke, Rousseau, Otis, Jefferson, Madison, and others. 2 hours.
4 Gr., 3 Se., 1 Sp. Total 8.

15. Dr. **Snow**. — The historical development of International Law. 1 hour.
2 Se., 1 Ju., 1 Law. Total 4.

ECONOMICS.

Primarily for Undergraduates: —

1. Professors **Taussig** and **Ashley**, Asst. Professor **Cummings** and Mr. **Clow**. — Outlines of Economics. — Mill's Principles of Political Economy. — Lectures on Economic Development, Distribution, Social Questions, and Financial Legislation. 3 hours.
1 Gr., 35 Se., 111 Ju., 136 So., 7 Fr., 35 Sp., 13 Sc., 2 Law. Total 340.

10. Professor **Ashley**. — The Elements of Economic History from the Middle Ages to Modern Times. 3 hours.
6 Gr., 17 Se., 20 Ju., 4 So., 1 Fr., 1 Sp., 2 Law. Total 51.

For Graduates and Undergraduates: —

2. Professor **Taussig**. — Economic Theory from Adam Smith to the present time. — Examination of selections from leading writers. 3 hours.
12 Gr., 16 Se., 10 Ju., 1 So., 3 Sp., 1 Law. Total 43.

3. Asst. Professor **Cummings**. — The Principles of Sociology. — Development of the Modern State, and of its Social Functions. 3 hours.
17 Gr., 19 Se., 5 Ju., 2 Sp., 4 Di. Total 47.

14. Asst. Professor **Cummings**. — Ideal Social Reconstructions, from Plato's Republic to the present time. 1 hour. 7 Gr., 8 Se., 5 Ju., 2 Sp. Total 22.

9. Asst. Professor **Cummings**. — The Social and Economic Condition of Workingmen in the United States and in other countries. 3 hours.
7 Gr., 16 Se., 11 Ju., 3 So., 1 Fr., 4 Sp., 1 Di. Total 43.

13. Professor **Ashley**. — The Development of Land Tenures and of Agrarian Conditions in Europe. 1 hour. 1 Gr., 1 Se. Total 2.

5[1]. Professor **Taussig**. — Railway Transportation. — Lectures and written work. 3 hours. 1st half-year. 3 Gr., 24 Se., 9 Ju., 1 So., 2 Sp. Total 39.

6². Professor **Taussig**. — History of Tariff Legislation in the United States. 3 hours. 2d half-year.
11 Gr., 33 Se., 36 Ju., 2 So., 1 Fr., 9 Sp., 5 Law. Total 97.

8¹. Professor **Dunbar**. — History of Financial Legislation in the United States. 2 hours. 1st half-year. 9 Gr., 26 Se., 23 Ju., 1 So., 2 Sp., 2 Law. Total 63.

12¹. Professor **Dunbar**. — Banking and the History of the leading Banking Systems. 3 hours. 1st half-year. 10 Gr., 24 Se., 15 Ju., 1 Sp. Total 50.

12². Professor **Dunbar**. — International Payments and the Flow of the Precious Metals. 3 hours. 2d half-year. 12 Gr., 18 Se., 7 Ju., 1 Sp. Total 38.

Primarily for Graduates: —

20. Professors **Dunbar**, **Taussig**, and **Ashley**, and Asst. Professor **Cummings**. — Seminary in Economics. 11 Gr., 1 Se. Total 12.

THE FINE ARTS.

Primarily for Undergraduates: —

1. Asst. Professor **Moore**. — Principles of Delineation, Color, and Chiaroscuro. — Lectures (once a week), with collateral reading. — Practice in drawing and in the use of water-colors. — Perspective. 3 hours.
1 Gr., 8 Se., 13 Ju., 18 So., 6 Fr., 1 Sp., 10 Sc., 2 B. Total 59.

2. Asst. Professor **Moore**. — Principles of Design in Painting, Sculpture, and Architecture. — Lectures (twice a week), with collateral reading. — Practice in drawing and water-colors. 3 hours. 6 Se., 3 Ju., 1 Sp., 1 B. Total 11.

For Graduates and Undergraduates: —

5. Mr. **Warren**. — The development of architectural styles, with especial reference to the Greek and Roman architecture. 3 hours.
10 Se., 5 Ju., 1 So., 1 Fr., 1 Sp., 2 Sc., 1 B. Total 21.

6¹. Mr. E. **Robinson**. — The History of Greek Art, and the relation of the Arts of Egypt, Assyria and Phoenicia to Greek Art. 3 hours. 1st half-year. 9 Gr., 31 Se., 25 Jr., 8 So., 1 Fr., 4 Sp., 2 Sc. Total 80.

7². Asst. Professor **Moore**. — The History of the Fine Arts from the decline of the Roman Empire to the end of the Renaissance period. 3 hours. 2d half-year. 6 Gr., 59 Se., 43 Ju., 32 So., 12 Fr., 14 Sp., 9 Sc. Total 175.

Primarily for Graduates: —

20. Mr. E. **Robinson**. — Special topics in the History of Classic Art.
1 Se. Total 1.

MUSIC.

For Graduates and Undergraduates: —

1. Professor **Paine**. — Harmony. 3 hours.
4 Se., 2 Ju., 4 So., 15 Fr., 1 Sp., 1 Law. Total 27.

2. Professor **Paine**. — Counterpoint. 2 hours. 1 Ju., 6 So., 1 Sp. Total 8.

3. Professor **Paine**. — History of Music, with analysis of the works of the great masters. 2 hours. 1 Gr., 2 Se., 3 Ju., 1 So., 1 Sp. Total 8.

Primarily for Graduates: —

6. Professor **Paine**. — Free Thematic Music. — Fugue in two voices. 2 hours.
1 Gr., 2 Se., 3 Ju., 1 Sp. Total 7.

MATHEMATICS.

Primarily for Undergraduates: —

A^1. Professor C. J. White. — Logarithms. — Plane Trigonometry, with its applications to Surveying and Navigation. 3 hours. 1st half-year.
5 Se., 4 Ju., 19 So., 66 Fr., 9 Sp., 5 Sc. Total 108.

B^2. Professor C. J. White. — Analytic Geometry (elementary course). 3 hours. 2d half-year. 6 Ju., 8 So., 30 Fr., 3 Sp., 3 Sc. Total 50.

C. Professor Byerly. — Analytic Geometry (extended course). 3 hours.
1 Gr., 2 Se., 3 Ju., 4 So., 15 Fr., 3 Sc. Total 28.

D^1. Asst. Professor Osgood and Mr. Love. — Algebra. 3 hours. 1st half-year. 12 Se., 6 Ju., 10 So., 31 Fr., 5 Sp., 8 Sc. Total 72.

E^2. Mr. Love. — Solid Geometry. 3 hours. 2d half-year.
11 Se., 8 Ju., 19 So., 54 Fr., 11 Sp., 12 Sc. Total 115.

F. Dr. Bôcher. — Trigonometry and Plane Analytic Geometry. 3 hours.
3 Se., 1 Ju., 3 So., 25 Fr., 8 Sc. Total 40.

1^1. Professor C. J. White. — Spherical Trigonometry. — Applications of Spherical Trigonometry to Astronomy and Navigation. 2 hours. 1st half-year. 2 Ju., 3 So., 5 Fr., 1 Sc. Total 11.

2. Professor Byerly. — Differential and Integral Calculus (first course). 3 hours. 4 Gr., 9 Se., 17 Ju., 36 So., 4 Fr., 9 Sc. Total 79.

4. Asst. Professor Osgood. — The Elements of Mechanics. 3 hours.
4 Gr., 3 Se., 6 Ju., 3 So. Total 16.

For Graduates and Undergraduates: —

3. Dr. Bôcher. — Modern Methods in Geometry. — Determinants. 3 hours.
4 Gr., 2 Ju., 7 So. Total 13.

5. Professor C. J. White. — Differential and Integral Calculus (second course). 3 hours. 4 Gr., 4 Se., 12 Ju., 1 So., 20 Sc. Total 41.

12^2. Professor C. J. White. — The Theory of Equations. 2 hours. 2d half-year. 2 Gr., 1 Se., 3 Ju., 2 So., 1 Sp., 1 Sc. Total 10.

6. Professor J. M. Peirce. — Quaternions, with applications to Geometry and Mechanics (first course). 3 hours. 10 Gr., 5 Se., 3 Ju., 1 Sp. Total 19.

7. Professor J. M. Peirce. — The General Theory of Algebraic Plane Curves; with a discussion of the properties of Curves of the Third Degree in point and line co-ordinates. 3 hours. 6 Gr., 1 Ju. Total 7.

8. Professor Byerly. — Analytic Mechanics. 3 hours.
5 Gr., 3 Se., 3 Ju., 2 So. Total 13.

13. Dr. Bôcher. — The Theory of Functions (introductory course). 3 hours.
7 Gr., 1 Ju. Total 8.

14. Asst. Professor Osgood. — Higher Algebra. 3 hours. 4 Gr. Total 4.

Primarily for Graduates: —

10. Professors Byerly and B. O. Peirce. — Trigonometric Series. — Introduction to Spherical Harmonics. — Potential Function. 3 hours.
7 Gr., 3 Se., 2 Ju., 3 Sc. Total 15.

Primarily for Graduates: —

11. Professor B. O. Peirce. — Hydrostatics. — Hydrokinematics. — Force Functions and Velocity-Potential Functions and their uses. 3 hours.
6 Gr., 1 Ju., 1 Sc. Total 8.

18. Asst. Professor Osgood. — The Theory of Substitutions. 3 hours.
2 Gr. Total 2.

19. Dr. Bôcher. — Functions defined by Differential Equations. 3 hours.
3 Gr. Total 3.

21. Professor J. M. Peirce. — Qualitative Algebra. 3 hours a fortnight.
2 Gr. Total 2.

Course of Research.

20*a*. Asst. Professor Osgood. — The Theory of Invariants. 1 Gr. Total 1.

ENGINEERING.

Primarily for Undergraduates: —

A. Mr. Love. — Advanced Algebra. — Solid Geometry. — Plane Trigonometry. 3 hours. 1 So., 1 Fr., 52 Sc. Total 54.

Ab. Mr. Love. — Analytic Geometry. — Differential and Integral Calculus. 5 hours. 1 Se., 27 Sc. Total 28.

B. Dr. Willson. — Practical Astronomy — Determination of time, latitude, and longitude. — Use of the sextant and astronomical transit. — Lectures, instrumental work, and computation. 3 hours.
2 Se., 2 Ju., 1 So., 1 Fr., 2 Sc. Total 8.

1. Mr. Moses and Mr. Johnson. — Mechanical Drawing. — Descriptive Geometry. — Tinting, Isometric Drawing, Shades and Shadows, Perspective. 6 hours. 6 Se., 7 Ju., 4 So., 51 Sc. Total 68.

2. Mr. Turner. — Surveying, Plotting, and Topographical Drawing. — City, Hydrographic, Mining and Geodetic Surveying. — Field Practice. — Johnson's Theory and Practice of Surveying. 6 hours.
5 Se., 3 Ju., 4 So., 16 Sc., 3 B. Total 31.

3^1. Mr. Moses. — Stereotomy and Machine Drawing. — Applications of Descriptive Geometry to constructions in stone and machinery. — Preparation of Models. 4 hours. 1st half-year.
1 Gr., 4 Se., 2 So., 33 Sc. Total 40.

3^2. Mr. McClintock. — Construction and maintenance of Common Roads. 3 hours. 2d half-year. 3 Se., 3 So., 2 Fr., 20 Sc. Total 28.

4. Mr. Turner. — Railroad Surveying, Location, Construction and Maintenance. — Estimates. — Searle's Field Engineering. — Wellington's Economics of Railroad Location. — Field Practice. 6 hours.
1 So., 13 Sc. Total 14.

For Graduates and Undergraduates: —

5^1. Professor Hollis. — Rational Mechanics and Graphical Statics. — Stresses in Framed Structures. — Investigation of Arches. 6 hours. 1st half-year.
1 Ju., 19 Sc. Total 20.

5^2. Professor Hollis. — Resistance of Materials as used for structural purposes. — Testing. — Lectures and laboratory work. 6 hours. 2d half-year. 2 Ju., 1 So., 16 Sc. Total 19.

6^1. Professor **Hollis** and Mr. **Giblin**.— Hydraulic and Wind Motors. — Water-Wheels, Turbines, Water-Engines, and Wind-Wheels. 3 hours. 1st half-year. 1 Se., 1 So., 5 Sc. Total 7.

6^2. Professor **Hollis**. — Machines. — General Theory and Efficiency. — Steam-Engines and Pumping-Engines. 3 hours. 2d half-year. 2 Gr., 3 Se., 3 Ju., 1 So., 16 Sc. Total 25.

7^1. Mr. **Rice**. — Water Supply, and Sanitary Engineering. 3 hours. 1st half-year. 11 Sc. Total 11.

7^2. Mr. **Turner**. — Hydraulics. — Flow of Water and Fluids of Varying Density. — Gauging of Streams and Pipes. — Power of Water-Falls. 3 hours. 2d half-year. 1 Gr., 1 Se., 9 Sc. Total 11.

8^1. Mr. **Giblin**. — Bridges and Buildings. — Plate Girders, Riveted and Pin-Bridges. — Details of Iron and Steel Construction. 6 hours. 1st half-year. 1 Se., 2 Sc. Total 3.

8^2. Mr. **Giblin**. — Masonry and Timber Structures and Foundations. — Arches, Dams, Piers, Pneumatic Foundation Work, and Tunnels. 6 hours. 2d half-year. 1 Gr., 1 Se., 2 Sc. Total 4.

10. Mr. **Adams**. — Dynamo-Electrical Machinery. — Theory and practice in management. 6 hours. 4 Gr., 1 Se., 3 Ju., 5 Sc. Total 13.

11. Mr. **Adams**. — Industrial Applications of Electricity. — Theory and practice in designing and constructing electrical machinery and electrical apparatus. 9 hours. 1 Gr., 2 Sc. Total 3.

18^2. Mr. **Moses**. — Mechanism. — Study of gearing and mechanical movements. 4 hours. 2d half-year. 1 Se., 1 So., 24 Sc. Total 26.

18^1. Professor **Hollis**. — Metallurgy. — Manufacture of the metals used in engineering construction. — Lectures. 3 hours. 1st half-year. 2 So., 16 Sc. Total 18.

PHYSICS.

Primarily for Undergraduates: —

B. Asst. Professor **Hall** and Mr. **Hyde**. — Experimental Physics. — Lectures (1 hour) and laboratory work. 9 Se., 9 Ju., 23 So., 25 Fr., 8 Sp., 35 Sc. Total 109.

C. Mr. **Sabine** and Mr. **Laughlin**. — Experimental Physics. — Measurements in Mechanics, Sound, Heat, Light, Electricity, and Magnetism. — Lectures and laboratory work. 3 hours. 6 Se., 4 Ju., 17 So., 27 Fr., 2 Sp., 3 Sc. Total 59.

1. Asst. Professor **Hall**. — General Descriptive Physics. — Lectures (2 hours) and laboratory work. 5 Se., 6 Ju., 6 So., 10 Fr., 4 Sp., 33 Sc. Total 64.

For Graduates and Undergraduates: —

3. Professor B. O. **Peirce** and Mr. **Duane**. — Electrostatics, Electrokinematics, and parts of Electromagnetism. — Lectures (1 hour) and laboratory work. 1 Gr., 5 Se., 11 Ju., 10 So., 18 Sc. Total 45.

4. Professor **Trowbridge** and Mr. **Sabine**. — Electrodynamics, Magnetism, and Electromagnetism. — Lectures (2 hours) and laboratory work. 5 Gr., 4 Se., 4 Ju., 6 Sc. Total 19.

6. Asst. Professor Hall. — Thermodynamics. — 2 hours, and laboratory work.
1st half-year: 1 Gr., 2 Se., 3 Ju., 7 Sc. Total 13.
2d half-year: 1 Gr., 2 Se., 2 Ju. Total 5.

Primarily for Graduates: —

9. Professor B. O. Peirce. — The Mathematical Theory of Electrostatics and Electrokinematics. 3 Gr., 1 Sc. Total 4.

Courses of Research.

20*a*. Professor Trowbridge. — Spectrum Analysis. 2 Gr., 1 Ju., 1 Sc. Total 4.

20*b*. Professor B. O. Peirce. — Investigation of problems in Mathematical Physics. 1 Gr. Total 1.

CHEMISTRY.

Primarily for Undergraduates: —

A. Professor Cooke. — Elementary Chemistry (lectures). 1 hour. 1st half-year. 3 Se., 5 Ju., 16 So., 383 Fr., 30 Sp., 26 Sc. Total 463.

B. Mr. Torrey. — Experimental Chemistry. — Lectures (2 hours) and laboratory work (2½, or if taken as a full course, 5 hours a week).
1 Se., 4 Ju., 10 So., 28 Fr., 3 Sp., 7 Sc. Total 53.

1. Professor Jackson. — General Descriptive Chemistry, including its applications in the arts, and embracing the scheme of the chemical elements. — Lectures (2 hours) and laboratory work.
1 Gr., 20 Se., 25 Ju., 30 So., 23 Fr., 3 Sp., 45 Sc. Total 147.

2*a*. Dr. Huntington. — Mineralogy of common rocks, including a study of the characters and distribution of the mineral species constituting ordinary rock. — Metallic Ores, including blow-pipe assaying and the simpler methods of furnace assaying of gold and silver ores. — 3 hours and laboratory work.
1 Gr., 1 Se., 1 So., 1 Sp., 1 Sc. Total 5.

2. Dr. Huntington. — Systematic Mineralogy. — Lectures in the Mineral Cabinet. 3 hours and practical exercises.
1 Gr., 4 Se., 1 Ju., 4 So., 1 Fr., 12 Sc. Total 23.

3. Professor H. B. Hill. — Qualitative Analysis (chiefly laboratory work, about nine hours a week). 15 Se., 13 Ju., 8 So., 2 Fr., 1 Sp., 17 Sc. Total 56.

4. Dr. Richards. — Quantitative Analysis, gravimetric and volumetric, (chiefly laboratory work, about nine hours a week).
1 Gr., 2 Se., 6 Ju., 4 So., 4 Sc. Total 17.

For Graduates and Undergraduates: —

4*a*. Dr. Richards. — Quantitative Analysis (second course). — Laboratory work. 3 hours. 1 Gr., 1 Ju., 2 Sc. Total 4.

5. Professor H. B. Hill. — The Carbon Compounds. — Lectures, (3 hours,) and laboratory work. 2 Gr., 4 Se., 4 Ju., 1 So., 1 Sc. Total 12.

8. Professor Cooke. — Chemical Philosophy. 1 hour.
1 Gr., 5 Se., 6 Ju., 1 So., 1 Fr., 6 Sc. Total 20.

Primarily for Graduates: —

6. Professor Cooke. — Advanced Problems in Inorganic Chemistry and Chemical Physics, including Molecular Weights and Volumes, Thermo-Chemistry, and Specific Refractive Power. — Lectures, (3 hours) and laboratory work. 2 Gr., 2 Se., 1 Ju., 4 Sc. Total 9.

7. Professor **Cooke**. — Crystallography and the Physics of Crystals. — Discussion and measurement of crystals. — Crystal Optics. — Lectures (3 hours) and laboratory work. 1 Gr., 3 Se., 2 Ju. Total 6.

Courses of Research.

20. (*a*) Professor **Cooke** and Dr. **Richards**. — Inorganic Chemistry, including Determination of Atomic Weights. 2 Gr., 3 Se., 2 Sc. Total 7.
   (*b*) Professor **Jackson**. — Aromatic Compounds. 2 Gr., 1 Se., 1 Sc. Total 4.
   (*c*) Professor H. B. **Hill**. — Organic Chemistry. 5 Gr., 1 Sc. Total 6.
   (*d*) Professor **Cooke**. — Chemical Physics. 1 Gr. Total 1.

BOTANY.

Primarily for Undergraduates: —

1². Professor **Goodale**. — Botany. — Lectures and laboratory practice. 3 hours. 2d half-year. 2 Gr., 6 Se., 16 Ju., 42 So., 73 Fr., 12 Sp., 26 Sc. Total 177.

2¹. Asst. Professor **Thaxter**. — Morphology of Plants. — Lectures and laboratory work. 3 hours. 1st half-year. 5 Gr., 7 Se., 6 Ju., 7 So., 27 Sc., 1 Di. Total 53.

For Graduates and Undergraduates: —

3. Professor **Goodale**. — Botany (second course). — Lectures and laboratory practice. 3 hours. 7 Gr., 2 Se., 1 Ju., 4 So., 8 Sc. Total 22.

4². Professor **Farlow** and Asst. Professor **Thaxter**. — Cryptogamic Botany. — Lectures and laboratory work. 3 hours. 2d half-year. 5 Gr., 3 Se., 3 Ju., 2 So., 6 Sc. Total 19.

Primarily for Graduates: —

Courses of Research.

20*a*. Professor **Goodale**. — Structure and Development of Phanerogams. — Experimental Vegetable Physiology. — Systematic, Economic, and Medical Botany. 8 Gr., 1 Se., 1 Ju., 4 Sc. Total 14.

20*b*. Professor **Farlow** and Asst. Professor **Thaxter**. — Structure and Development of Cryptogams. 9 Gr., 1 Sc. Total 10.

ZOÖLOGY.

Primarily for Undergraduates: —

1¹. Dr. C. B. **Davenport**. — Zoölogy. — Lectures and laboratory demonstrations. 3 hours. 1st half-year. 4 Gr., 9 Se., 16 Ju., 19 So., 25 Fr., 7 Sp., 43 Sc., 1 Di. Total 124.

2². Dr. C. B. **Davenport**. — Morphology of Animals. 3 hours. 2d half-year. 3 Gr., 7 Se., 7 Ju., 8 So., 26 Sc., 1 Di. Total 52.

For Graduates and Undergraduates: —

3. Dr. G. H. **Parker**. — Comparative Anatomy of Vertebrates. — Lectures and laboratory work. 3 hours. 5 Gr., 3 Se., 2 Ju., 1 So., 8 Sc. Total 19.

4¹. Professor **Mark** and Dr. W. McM. **Woodworth**. — Microscopic Anatomy. — Lectures and laboratory work. 3 hours. 1st half-year. 4 Gr., 1 Se., 1 Ju., 3 So. Total 9.

5^2. Professor Mark. — Embryology of Vertebrates. — Lectures and laboratory work. 3 hours. 2d half-year. 3 Gr., 1 Se., 1 Ju., 1 So. Total 6.

6^2. Dr. C. B. Davenport. — Experimental Morphology. — Lectures and laboratory work. 3 hours. 2d half-year. 2 Gr., 1 Se., 1 Sc. Total 4.

7^1. Dr. G. H. Parker. — Nervous System and its Terminal Organs. 3 hours. 1st half-year. 6 Gr., 2 Se., 4 Sc. Total 12.

Primarily for Graduates: —

Course of Research.

20*a*. Professor Mark. — Anatomy and Development of Animals. 8 Gr., 1 Se., 3 Sc. Total 12.

GEOLOGY.

Primarily for Undergraduates: —

4. Professor Shaler and Mr. Dodge. — Elementary Geology. — Lectures, recitations, and field excursions. — Geikie's class book of Geology (3d ed.). 4 hours. 1 Gr., 40 Ju., 56 So., 84 Fr., 16 Sp., 53 Sc. Total 250.

5^2. Dr. Harris and Mr. Ladd. — Elementary Geology. — Laboratory and field exercises. 6 hours. 2d half-year. 2 Se., 6 Ju., 9 So., 6 Fr., 2 Sp., 18 Sc. Total 43.

2^1. Professor Davis and Mr. Griswold. — Physical Geography. — Lectures, recitations, written exercises, and laboratory work. 4 hours. 1st half-year. 12 Ju., 12 So., 16 Fr., 2 Sp., 14 Sc. Total 56.

1^2. Professor Davis and Mr. Ward. — Meteorology. — Lectures, recitations, written exercises and laboratory work. 4 hours. 2d half-year. 1 Gr., 17 Ju., 10 So., 13 Fr., 2 Sp., 17 Sc. Total 60.

For Graduates and Undergraduates: —

8. Mr. J. B. Woodworth. — General Critical Geology. — Lectures, field work, theses, and library work. 2 hours. 1 Gr., 2 Se., 4 Ju., 1 So., 1 Sp., 8 Sc. Total 17.

9. Dr. Harris. — Stratigraphical Geology, with especial reference to the history and results of geological surveying in the United States. — Lectures, library work, and theses. 2 hours. 1 Se. Total 1.

10. Mr. H. L. Smyth. — Mining Geology. — Lectures, laboratory and field work. 3 hours, from December to May. 1 Gr., 3 Se., 10 Sc. Total 14.

11. Mr. H. L. Smyth. — Geological Surveying. — Lectures, laboratory and field work. 3 hours, from December to May. 1 Gr., 1 Se., 3 Sc. Total 5.

12. Asst. Professor Wolff. — Petrography. — Lectures, laboratory work, and theses. 2 hours. 3 Gr., 1 Se., 4 Sc. Total 8.

14. Professor Shaler and Dr. Jackson. — Palaeontology. — Lectures, laboratory work, and theses. 2 hours. 3 Gr., 3 Se., 6 Sc. Total 12.

15. Professor Shaler and Dr. Jackson. — Historical Geology. — Laboratory and field work, and theses. 1 hour. 6 Gr., 2 Se. Total 8.

18. Professor Whitney. — Economical Geology. Lectures, reading and theses. 2 hours. 4 Gr., 7 Se., 1 So., 7 Sc. Total 19.

Primarily for Graduates: —

COURSES OF RESEARCH.

20. Professor **DAVIS**. — Physical Geography and Meteorology (second course). — Lectures, theses, and reports. 2 hours. 5 Gr., 2 Se., 2 Sc. Total 9.

22. Professors **SHALER** and **DAVIS**, Asst. Professor **WOLFF**, and Dr. **HARRIS**. — Advanced geological field work. Field and library work, with weekly conferences. 3 Gr., 1 Se., 7 Sc. Total 11.

23. Asst. Professor **WOLFF**. — Petrographical research in the field and laboratory. 4 Gr., 1 Se., 3 Sc. Total 8.

24. Professor **SHALER** and Dr. **JACKSON**. — Palaeontology. 2 Gr. Total 2.

26[1]. Professor **WHITNEY**. — Geographical methods and results. 2 hours. 1st half-year. 3 Gr., 6 Se., 1 Ju., 2 So., 1 Sp. Total 13.

AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

For Graduates: —

Professor **PUTNAM**. — Course of special training and research. 2 Gr. Total 2.

ANATOMY, PHYSIOLOGY, AND PHYSICAL TRAINING.

This course to count towards the degree of S.B. but not towards the degree of A.B.

1. Dr. G. W. **FITZ**. — The Elementary Physiology and Hygiene of Common Life. — Personal Hygiene. — Emergencies. — Laboratory work. 2 hours. 2d half-year. 1 Se., 2 Ju., 1 So., 19 Sc. Total 23.

SUMMER COURSES OF INSTRUCTION.

Courses which may be counted for the degrees of A.B. or S.B: —

MATHEMATICS.

S1. Mr. **LOVE**. — Plain Trigonometry. — Logarithms. — Calculation of heights, distances and areas. 5 times a week for 6 weeks. 1 Fr., 1 Sc. Total 2.

ENGINEERING.

S1. Mr. **TURNER**. — Surveying, Plotting, and Topographical Drawing. — Johnson's Theory and Practice of Surveying. — Geodesy. 6 times a week for 6 weeks. Half-course. 1 Sc. Total 1.

S3. Mr. **MOSES**. — Draughting and Descriptive Geometry. — Problems in Geometrical Drawing. — Isometric Drawing. — Perspective. 6 times a week for 6 weeks. Half-course. 1 Ju. Total 1.

PHYSICS.

S2. Mr. **SABINE**. — Experimental Physics. — Measurements in Mechanics, Sound, Heat, Light, Electricity, and Magnetism. — Laboratory work. 6 times a week for 6 weeks. Half-course. 1 Ju. Total 1.

BOTANY.

S1. Mr. JONES. — Vegetable Morphology and Physiology. — Laboratory work. — Lectures. 5 times a week for 5 weeks. Half-course.
1 Gr., 1 Se., 1 Sc., 1 B. Total 4.

GEOLOGY.

S1. Mr. LADD. — Elementary Geology: at Cambridge. Lectures, laboratory and field-work. 5 times a week for 6 weeks. Half-course.
2 So., 2 Fr., 1 Sp., 4 Sc. Total 9.

S2. Professor BRIGHAM and Mr. KÜMMEL. — Advanced course in geological field-work: at Utica, N. Y., Catskill, N. Y., and Meriden, Conn. 6 weeks. Half-course.
1 Se., 1 So., 8 Sc. Total 10.

In arranging the lists of studies for the year 1894–95, not only the customary changes in the corps of instructors, caused by the departure of some on leave of absence and the return of others, but also an unusual number of changes caused by death or retirements, called for attention. The retirement of Professor Lane, and the projected absence of the late Professor Cooke, each after more than forty years of distinguished service, the retirement of Professors Nash and C. J. White and of Mr. Bendelari, and the death of Dr. Freeman Snow, called for serious readjustments of work. In some cases these were effected by a redistribution of courses, and in others it was found necessary to leave some of the usual instruction without provision for a time. It is to be observed, however, that expansions in the same or in other departments offset to a great extent the diminution which might have been expected in the aggregate of instruction offered. It is difficult to reduce the courses offered by all departments, especially the Seminary Courses, to a precisely equivalent form of statement; but adopting the mode of calculation commonly used, and separating from the rest the departments of Architecture and Engineering, in which, as will be shown below, an increase has taken place under exceptional circumstances, the amount of instruction offered under this Faculty, stated in courses of three hours per week running through the year, or their equivalents, has been as follows from 1892 to 1895: —

	1892–93.	1893–94.	1894–95.
Omitting Architecture and Engineering	238	256½	251½
Architecture and Engineering	14½	17½	32½
	252½	274	284

Omitting Architecture and Engineering, five courses are shown in the first line of the above statement to have been lost for 1894–95. Four courses were, however, discontinued or suspended in consequence of the sudden death of Dr. Snow, in September last. In the main body of elective courses then, with this allowance, nearly all of the gain in total amount secured in 1893–94 has been kept.

Among the changes made and new courses established for 1894–95, it is to be noted that a half-course, giving in outline the History and Development of English Literature, and conducted by Professors Childs, A. S. Hill, Briggs and Kittredge, has been established for Freshmen who have passed creditably the admission examination in English. Professor Child also offers for Graduates a half-course in the English and Scottish Popular Ballads. Mr. Conant was authorized to add to his course on the Principles of the Common Law a course on Municipal Corporations and Methods of Judicial Control over Local Administration, but was obliged to defer offering this subject in order to take charge of the course on the Elements of International Law, formerly given by Dr. Snow. The course of lectures on Elementary Chemistry, for many years given by Professor Cooke, was withdrawn for 1894–95 with his consent. Attendance on these lectures had long been required of Freshmen, but the opinion had gained ground that the Department of Chemistry could dispense with this support, as the Department of Physics had already done with a similar course of introductory lectures. The permanent withdrawal of the course in Chemistry as a required course, if this should be decided upon, will free the system of instruction from a striking anomaly. The detail of Lieutenant Wirt Robinson of the United States Army for military instruction in the Scientific School gave opportunity for a course of lectures and reading upon Military Science, with illustrations from military history, which the Faculty authorized to be counted as a half-course towards the degree of A.B., and to be included in the four years' course on General Science for which the degree of S.B. is given. Other courses appearing in the list of studies authorized for 1894–95 may be recapitulated briefly, as follows: —

Lectures on Greek Grammar, with study of Dialectic Inscriptions. *Half-course.* Professor ALLEN.

Disputed Questions in Athenian Topography. *Half-course.* Professor J. W. WHITE.

Metaphysics. The fundamental problems of Theoretical Philosophy, considered constructively. Professor ROYCE.

History of Northern and Eastern Europe, from 1453 to 1795. *Half-course.* Dr. COOLIDGE.

The Algebra of Logic. *Half-course.* Professor J. M. PEIRCE.

Light and Heat, lectures and laboratory work. Mr. SABINE.

General Anthropology, with special reference to American Archaeology and Ethnology (for graduates). Professor PUTNAM.

The most important changes in the list of studies were those made in consequence of the rapid development of the Lawrence Scientific School. To a great extent the instruction given under this Faculty is open to all qualified students under its jurisdiction, but the special objects of the Scientific School call in some departments for an increased amount of special provision primarily, if not exclusively, for its use. The Faculty voted in March, 1894, to establish a four years' course in Architecture, leading to the degree of S.B. A single course in the Technical and Historical Development of the Classical Styles, given by Assistant Professor Warren, was then in existence. From this nucleus was developed a scheme of instruction comprising ten courses, or about two years' work, a part of which takes effect in courses to be given in the current academic year and a part in courses to be given in their due succession in the next year and the year following. Professor Warren, in addition to the courses above named, was authorized to give in the year 1894–95 a course on the Development of the Mediaeval Styles, to be followed hereafter by a course on the Development of the Renaissance and Modern Architecture. A course in Elementary Architectural Drawing, to be given by Mr. Newton, was established, and a succession of three courses in Freehand Drawing from architectural subjects, was laid out, of which the first is now in progress. A similar succession of three courses in Architectural Design was authorized, of which the first is given this year and the others will follow in order. The courses in Freehand Drawing and in Design are under the charge of Assistant Professor Warren and Mr. Newton. As the purpose of this general body of instruction is the training of architects, only the first course, that on the development of the ancient styles, was admitted as a qualification for the degree of A.B.

A remarkable extension of the courses in Engineering was also provided for, being rendered necessary by the recent increase in the number of four-year courses, — which now cover Civil, Electrical, Mechanical, and Mining Engineering, — and by the great increase in the number of students seeking the degree of S.B. by these various avenues. After providing for a more systematic arrangement of the Engineering Mathematics after 1894–95, in two courses under Mr. Love, to conform to the increased requirement at admission, a half-course in Descriptive Astronomy was established, satisfying a want which has long been known to exist, and also a new half-course in Practical Astronomy and the use of instruments in Navigation and Surveying; both of these courses being given by Dr. Willson. The additions to the more technical courses can only be briefly recapitulated here, as follows: —

Mechanism. Study of gearing and mechanical movements. *Half-course.* Mr. MOSES.

Geodesy. Geodetic, Mining and Hydrographic Surveying. *Half-course.* Mr. TURNER.

Irrigation. Construction of works and of canals. Hydrography. *Half-course.* Mr. TURNER.

Shopwork, at the Rindge School and under Professor HOLLIS, now rearranged in a series of half-courses, viz:

- (*a*) Metals.,
- (*b*) Blacksmithing and forging.
- (*c*) Work in wood, pattern-making and turning.
- (*d*) Foundry Practice.
- (*e*) Machine Shop Practice.

Engineering Laboratory courses, viz:

- (*a*) Management of the steam-engine. *Half-course.* Mr. MARKS.
- (*b*) Testing machinery, boilers, and instruments. Mr. MARKS.
- (*c*) Measurement of flow of water and testing hydraulic machinery. *Half-course.* Mr. L. J. JOHNSON and Mr. TURNER.

Machinery and Boilers. Type, theory and efficiency. *Half-course.* Mr. MARKS.

Steam-engine and Boilers. Construction. *Half-course.* Mr. MARKS.

Thermodynamics of the steam-engine. Theory and efficiency. *Half-course.* Mr. MARKS.

Heating and Ventilation. *Half-course.*

Machine Design. Designing the parts of machinery. Mr. MOSES.

Machine Design. Completed designs, estimates and specifications.

Metallurgy. Manufacture of the metals. *Half-course.* Mr. TORREY.

Engineering Conference. The theory of machinery and allied questions. Professor HOLLIS.

Contracts and Specifications. *Half-course.* Mr. CONANT.

The two courses in Electrical Engineering, previously existing have also been somewhat expanded and rearranged, the group now consisting of five half-courses.

The general result is that in place of the sixteen and a half courses in Engineering and a half-course in Physics offered for the year 1893–94, the scheme for the current year presents the equivalent of twenty-seven and a half courses. The systematic arrangement of this body of instruction and the judicious application of available resources for completing the equipment given to students in the several branches of Engineering was an important piece of work and was the subject of much consideration and experiment.

Most of the courses in Engineering are for the special use of the Lawrence Scientific School and are not counted towards the degree of A.B. The department of Geology, however, has a double aspect, most of its courses being used in preparing for the A.B. and the S.B. alike, and some additions determined upon in this department therefore merit particular notice.

Physical Geography of the United States. ***Half-course.*** **(Alternating with a similar course on the Physical Geography of Europe.) Professor Davis.**

Physical Geography (third course). Professor Davis.

Meteorology (second course). Professor Davis.

(The two last named courses taking the place of a single course previously existing).

Glacial Geology. ***Half-course.*** **Mr. J. B. Woodworth.**

Pre-Cambrian Geology of North America. ***Half-course.*** **Mr. H. L. Smyth.**

Geological Investigation in field and laboratory, supervised by the instructors in Geology.

A half-course in the Geology and Mineralogy of building stones, to be conducted by Assistant Professor Wolff, was established with a view to its utility for students in Architecture, but will not be given until the year 1895–96.

In my last report a full statement was made of the reasons which had led the Faculty to advise a revision of the Standing Votes of the Corporation and Overseers relating to the degrees of A.M., Ph.D., and S.D. Although, under a collection of rules of which a part are obsolete and all were designed for a state of things which no longer exists, difficulties of procedure continue to present themselves, the effort to secure the needed revision has been suspended. The circumstances attending this suspension need to be briefly stated. The revision proposed by the Faculty and appended to my last report (p. 86) was forwarded to the Corporation, and being approved by the President and Fellows, was forwarded to the Board of Overseers. After consideration of the subject, the Overseers returned the proposition to the Corporation December 6, 1893, with the suggestion that a statute be framed to contain the requirements for all the ordinary degrees granted by the University. The proposition therefore came back to the Faculty accompanied by this suggestion January 16, 1894, with the request from the Corporation that the Faculty would further examine the whole matter. Upon further consideration, in the light of the votes and other documents received from the governing boards, it appeared to the Faculty that the objects apparently had in view by all parties might be secured by a simple repeal of the Standing Votes, which would place the three higher degrees in Arts and Sciences under the same safeguards of prescriptive usage and official fidelity which are found to be a sufficient reliance in administering all the other ordinary degrees, and a new proposition to this effect was accordingly sent to the Corporation February 20, 1894. Two weeks later this second proposition was returned, accompanied by a vote in which the President and Fellows requested the Faculty to reconsider the terms on which the degree of A.B. is conferred.

Although this result caused regret, as a postponement of an easy cure for some specific evils, it must be admitted that the vote of the Corporation was not so much a dismissal of the subject on which they had previously shown a disposition to act, as an invitation to consider, in connection with it, a question more fundamental than the Faculty had been disposed to take up. The question as to the requirements for the Bachelor's degree has remained in the background since the attempt to settle it in 1890, and still there is hardly any direction in which the Faculty has not continued to feel the serious difficulties arising from the existing regulations as to the time required for the Bachelor's degree. Embarassing questions never fail to present themselves in connection with the degree of Master of Arts; the pressure from students eager to begin their professional studies is stronger, and the relations between Harvard College and the professional schools show greater need of clear definition and better adjustment; the desire among ambitious students to quicken their progress is common and increasing; and the requirements for admission, for the revision of which there is some occasion, are closely locked, not only with the details of the College course, but with the general question of the total requirement which is to precede the degree of A.B. The Faculty has even found that the system of Honors at graduation, now recognized as ineffective, can hardly be dealt with in a thorough and satisfactory manner, independently of the question as to the length of the College course.

Compelled to consider and answer applications made to them in individual cases, the Faculty during the last few years have felt their way cautiously, but, it is believed, with a growing sense that the present treatment of the whole group of questions connected with the Bachelor's degree is provisional and insufficient. The policy which has been pursued in dealing with such cases as have arisen is best shown by the facts contained in the table presented herewith. This table shows for the class graduating in each of the five years, 1890–94, (1) the number of those who received the degree of A.B. in three years from the time of admission as Freshmen, or in three years after admission as Special Students or as students in the Lawrence Scientific School, in cases where transfer to a College class was allowed in view of full satisfaction of all requirements; (2) the number of those who received leave of absence for the Senior year, upon the completion of the whole or nearly the whole of the number of courses required for graduation; (3) the number of those who at the beginning of the Senior year had either completed the whole number of courses required for graduation or lacked not more than two courses, but were nevertheless registered as Seniors.

	1890.	1891.	1892.	1893.	1894.
Total number receiving A.B.	282	283	293	332	348
1. Graduated in three years	14	18	18	9	18
Of these were credited at admission,					
2 or more courses each	2	4	3	3	4
Less than 2 courses each	3	4	5	1	3
2. Had leave of absence for Senior year . .	2	2	7	15	11
Credited with 18.2 courses			1	6	8
17.7 "		1		2	3
17.2 "		1	1	1	
16.7 "			1	2	
16.2 "	2		4	4	
Of these were credited at admission,					
2 or more courses each				3	
Less than 2 courses each		1			2
3. Registered as Seniors, but credited with 16 courses or more	9	13	30	24	48
Credited with 18.2 courses	1	4	3	6	10
17.7 "		1	1	1	
17.2 "	3	1	7	5	9
16.7 "	3		4	4	8
16.2 "	2	7	15	8	21
Of these were credited at admission,					
2 or more courses each		2		1	
Less than 2 " "	1	3	3	1	1
Number credited in three years with 16 or more courses	15	33	55	48	77
With 18 or more courses	25	22	22	21	36

The existence of these three classes of cases is due in part to credit received by students for College studies in which they have passed a creditable examination at the time of their admission, and in part to credit for extra work done in College. The anticipation of College work, to an amount usually insufficient by itself to entitle the student to enter as a Sophomore, appears from the table to have had some importance in the first class, the cases of actual graduation in three years, but to have been usually an irregular and unimportant element in the second and third classes. In the great majority of cases the advanced condition of the student's work at the end of the Junior year has been due chiefly to his ability and desire to perform successfully more than the required number of courses. The rules of the Faculty recognize the possibility of doing this, by allowing additional elective work to be taken to the extent of one course in the Freshman year and of two courses in any other year. It would in fact be difficult to deny this privilege to a capable student, considering that it is necessarily allowed to one who by reason of failure in any study or for any other reason has deficiencies to make up in order to secure his degree, and considering further that it is the only means by which a student who has passed a part of the work for a year by anticipation when admitted, can complete that year and thus secure the benefit in point of time, to which he is fairly entitled. The increasing number of cases in which this privilege was used and made the foundation of a claim for graduation in three years led the Faculty in the latter part of 1891 to charge a standing committee with the duty of carefully sifting all applications for shortening the College course, and of advising both applicants and the Faculty according to the individual merits of each case, having regard to the age, scholarship, pecuniary needs and other circumstances of the applicant. This conservative action has no doubt held in check the growth of the first class of cases, of actual graduation at the end of three years.

The two classes of cases resting upon the complete or nearly complete state of the student's work at the beginning of the Senior year are less simple. Some students of high rank, who might make a strong claim for graduation at the end of three years, prefer nevertheless to receive their degrees with the class in which they entered, and to use the fourth year either in a professional school or in more advanced study in College, receiving leave of absence in the one case or continuing in the Senior class in the other. Students of this description will be found therefore either in class 2 or class 3, according to the use which the individual finds it advisable to make of the year which he has gained. Other students, also of excellent rank, who are short of the required 18.2 courses only by a small amount easily made up, are to be found in class 3, because they have not cared to avail themselves of their extra work, unless it be in some cases by obtaining the reduction of Senior year work, which the rules allow in approved cases and for purposes of special study. There is also a more difficult class of cases of students who, because of low rank or for other reasons, have not been recommended for their degree at the end of the Junior year, and are therefore found at the beginning of the Senior year with 18.2 courses completed or nearly so. In some cases these students are found in class 3, registered in the Senior class with the permitted substitution of other studies, perhaps professional, for a part of the Senior year work; in other cases they obtain leave of absence, either to enter a professional school or to go into some business. Strictly, in any such case, whatever the number of courses already passed by the student, the Faculty could demand a Senior year with its required tale of four courses and the minimum proficiency in each. Practically, the Faculty recognize the small value of the work likely to be done if enforced under such conditions, and are willing to dispense with the student's presence, withholding his degree until the end of the year. The alternative course of giving the degree at once upon the performance of a stated amount of work of indifferent quality, they have not felt themselves warranted in adopting. It is obvious, however, that the change in the regulations of the Law School, strongly inviting students of Harvard College to enter the school at the end of the Junior year, is likely to combine with other influences to increase materially the number of applications for leave of absence, as well as those for graduation after three years.

Without undertaking any further examination of the table here presented, it is enough to remark here that the figures give evidence of a considerable repressive influence exercised by the Faculty or its Committee, and also of a strong and growing tendency among students to increase their work. The repression is shown especially by the moderate number of cases of actual graduation in three years, which would easily increase if there were a less careful scrutiny of the special circumstances of each application. The tendency to increase the amount of work undertaken is shown by the gain in the total number of students who at the end of the Junior year have obtained credit for sixteen courses or more. This number shows a steady gain from year to year and in 1893–94 amounted to more than one-fifth of the whole number graduating. This gain is not the result of any special influence exercised by the Faculty in that direction. The only influence exercised is the friendly advice occasionally given to a student as to the expediency of using the opportunity for extra work afforded by the rules. This advice is sometimes encouraging and sometimes dissuasive, but it is probably always directed with a view to the wisest use of time in each special case. If then the practice of taking more than the required number of courses gains ground, the reason would appear to be that the freedom allowed by the rules is found in an increasing number of cases to present solid advantages.

The close of the academic year 1893–94 marked the completion of the twenty-fifth year during which the present President of the University has presided over the Faculty of Arts and Sciences and the various boards of which this is the successor and representative. It was with great satisfaction that the Faculty took the opportunity to record their deep sense of the debt which the interests committed to their charge owe to the wise and strong administration which opened in 1869. Of the twenty-seven members then composing the Faculties of Harvard College and the Scientific School, only six remained in the service of the University; and of the eighty-six members composing the Faculty of Arts and Science in 1894 nearly two-thirds finished their academic studies within the last twenty-five years. The Faculty felt, however, that the change in the composition of their own body was not greater than the change undergone by the whole University, in this period of unexampled growth in numbers, intellectual resources and scholarly devotion. They caused a minute to be prepared therefore for the commemoration of the twenty-fifth anniversary of the day (June 7, 1869), on which it appears that the President took his seat as presiding officer of the Faculty of Harvard College, and after its adoption entered the minute at large upon their record. To give due publicity and permanence to this emphatic recognition of memorable service, the entry made upon the record of the Faculty on this occasion is annexed to the present report.

CHARLES F. DUNBAR, *Dean*.

DECEMBER, 1894.

THE COLLEGE.

To the President of the University:

Sir, — I beg to make my report on the condition of Harvard College during the academic year 1893–94.

The number of students at the beginning of the year was sixteen hundred and fifty-six: —

Seniors	323
Juniors	352
Sophomores	394
Freshmen	425
Total number of undergraduates	1494
Special Students	162
Total	1656

These figures show a gain of fifty-eight over the preceding year: —

	Gain.	Loss.
Seniors	..	4
Juniors	24	..
Sophomores	9	..
Freshmen	16	..
Special Students	13	..
Total gain	62	
Total loss	4	
Net gain	58	

Through a deplorable accident in the spring, the University lost several men of good promise: One Law Student, three Seniors, and one Junior were drowned together. In the summer vacation one member of the class of 1897 was drowned. In February one Junior was killed by an accident in boxing.

Three hundred and fifty-one persons, of whom fifty-two were not registered as Seniors, received in June the degree of Bachelor of Arts. The losses and the gains in the three younger classes between November, 1893, and October, 1894, may be learned from the following tables: —

	November, 1893.		Loss.	Gain.	October, 1894.	
Class of 1895 . .	(Juniors)	352	79	50	(Seniors)	323
Class of 1896 . .	(Sophomores)	394	83	40	(Juniors)	349
Class of 1897 . .	(Freshmen)	425	70	70	(Sophomores)	425
			232	160		
Net loss in the three classes between Nov., 1893, and Oct., 1894 72						

	Class of 1895.	Class of 1896.	Class of 1897.	Total for three Classes.
LOSSES.				
Left College before the end of the year . .	13	13	24	50
Left College at the end of the year	32	10	17	59
Were "dropped" and left College	7	6	5	18
Entered a lower class	4	36	20	60
Entered a higher class	23	18	4	45
Total loss	79	83	70	232
GAINS.				
From higher classes	6	12	37	55
From lower classes	17	4	. .	21
Newly admitted	27	24	33	84
Total gain	50	40	70	160
Net loss	29	43	0	72

The class of 1896 entered College subject to the new rule of the Faculty that no student shall advance beyond the Sophomore class until he has made up his admission conditions. Hence the unusual shrinkage of the Junior class and the corresponding expansion of the Sophomore.

Of the thirty-two men lost by the class of 1895, twenty-two have nearly or quite fulfilled the requirements for the degree of A.B., and have obtained leave of absence from the College. In spite of this loss and the loss of men driven away by poverty, the College contains a few more students than ever before.

The next table shows the losses and the gains in the number of Special Students since December, 1893: —

In attendance, December, 1893	162
Left College before the end of the year	32
Left College at the end of the year	51
Entered a College class	15
Total loss	98
Returned to College, 1894	64
Newly admitted	104
In attendance, October, 1894	168
Net gain	6

We have no worthier pupils than the best of our Special Students: if they have lacked early opportunities, they are the better able to appreciate the opportunities of the present; and whether pursuing a special course of study with no degree in view or studying for admission to a College class, they work with a will. On the other hand, many persons beg for Harvard privileges without earning them. Rejected candidates for admission to the Freshman class lay siege successively to the Dean of the College, to the Chairman of the Committee on Special Students, and even to the Dean of the Scientific School — for they will cheerfully acquire an ephemeral affection for Science rather than go back to school. College courses might soon be clogged with untrained students, and standards of College work might be seriously lowered, if the Committee on Special Students were not vigilant and firm.

In December, 1893, the Faculty formally conferred on this committee the right to put Special Students on probation. The powers of the Committee have never been clearly defined; but little by little the Committee and the Administrative Board have arrived at an understanding: the Committee settles questions of study; the Board deals with serious offences.

Of four hundred and twenty-five persons admitted by examination, only three hundred and sixty-three appear as Freshmen. Thus the Freshman class is not so large as in 1893 or 1892: —

Admitted by examination in 1894	363
before 1894	9
from other colleges	2
from a higher class	24
from the Special Students	2
from the Lawrence Scientific School	1
Total	401

Thirty-six persons who took in June some of their Final Examinations for admission did not take the remainder in September. Besides these, five hundred and five (twelve more than in 1893) took Final Examinations. Of the five hundred and five, three hundred and seventy-six already had Preliminary certificates; sixty-seven (ten fewer than in 1893) divided the examinations between June and September; twenty-nine took all their examinations in June; and thirty-three took all in September: —

	Admitted.	Admitted "Clear."	Rejected.
June	337	163	42
September	88	19	38
Total	425	182	80
Total rejected	80	..	..
	505	..	..

The graduate of the regular preparatory school is ready for examination in June; September brings the hastily prepared youth who, after hard and anxious study through the hottest weeks of the year, is often physically and mentally unfit for a searching test. Even if admitted, he makes a poor showing at first; for, just when the College demands his prompt and active service, he feels that the strain is over and the prize is won: he is emancipated and exhausted.

The five hundred and five candidates chose their plans of admission as follows: —

Plan (*a*): All the Elementary Studies and at least two Advanced Studies; fifteen hours of examination	192
Plan (*b*): All the Elementary Studies except either German or French, and at least three Advanced Studies; sixteen hours of examination	275
Plan (*c*): All the Elementary Studies except either Greek or Latin, and at least four Advanced Studies, including Advanced Mathematics; seventeen hours of examination	34
Plan (*d*): All the Elementary Studies except either German or French and either Greek or Latin, and at least five Advanced Studies, including Advanced Mathematics; eighteen hours of examination	4
	505

Plan (*a*), which at one time was gaining on Plan (*b*), has lost materially, attracting fewer candidates than in 1892; Plan (*b*), which has proved itself the plan most agreeable to the schools, has gained twenty-five candidates since last year; Plan (*c*), which gained last year, shows this year an insignificant loss; and Plan (*d*), after dropping in 1893 to one candidate, has risen again to its normal number of four.

The next table shows the comparative success of the four plans. The average percentage of rejection is slightly higher than in 1893: —

	Admitted.	Rejected.	Percentage of Failure.
Plan (*a*)	162	30	15.6
" (*b*)	233	42	15.2
" (*c*)	28	6	17.6
" (*d*)	2	2	50

Of the five hundred and five candidates, four hundred and twenty-five offered Ancient History rather than Modern; and three hundred and forty-nine offered Experimental Physics rather than Descriptive: since last year, Modern History has lost and Descriptive Physics has gained; but neither the loss nor the gain is so large as to be significant. The table showing the relative attractiveness of the Advanced Studies is annually surprising by reason of its constancy: —

	1890 and 1891.	1892.	1893.	1894.
1.	Latin.	Latin.	Latin.	Latin.
2.	Greek.	Greek.	Greek.	Greek.
3.	Latin Comp.	Latin Comp.	Latin Comp.	Latin Comp.
4.	Greek Comp.	Greek Comp.	Greek Comp.	Greek Comp.
5.	Solid Geom.	French.	French.	French.
6.	French.	Solid Geom.	Solid Geom.	Solid Geom.
7.	Log. & Trig.	Log. & Trig.	Log. & Trig.	Log. & Trig.
8.	German.	German.	German.	Chemistry.
9.	Chemistry.	Chemistry.	Chemistry.	German.
10.	Mech. or Adv. Alg.	Adv. Alg.	Adv. Alg.	Adv. Alg.
11.	Anal. Geom.	Anal. Geom.	Anal. Geom.	Anal. Geom.
12.	Physics.	Physics.	Physics.	Physics.

Since 1893, Chemistry and German have changed places; but the change warrants no new inference in regard to their relative popularity: in 1892 and 1893 Chemistry was three candidates, or less than one per cent, behind German; in 1894 German is five candidates, or less than one per cent, behind Chemistry. In the actual number of candidates both subjects have lost ground. The next table gives the details on which the foregoing table is based: —

Number of Candidates offering	1891.		1892.		1893.		1894.	
	403	Per cent.	452	Per cent.	493	Per cent.	505	Per cent.
Adv. Greek . .	277	68	311	69	364	74	339	67
" Latin . .	362	89	378	84	449	91	431	85
Greek Comp. .	214	53	233	52	261	53	271	53
Latin " .	268	66	267	59	337	68	315	62
Adv. German .	77	19	61	13	84	17	66	13
" French .	92	22	124	27	160	32	141	28
Logarithms and Trigonometry	86	21	93	21	105	21	86	17
Solid Geometry	100	25	111	25	110	22	92	18
Anal. Geometry	18	4	7	2	10	2	12	2.4
Adv. Algebra .	27	6	21	5	18	4	23	4
" Physics .	5	1	7	2	2	0.4	9	1.8
Chemistry . .	41	10	58	13	81	16	71	14

Greek Composition, Analytic Geometry, Algebra, and Physics are the only subjects that have not lost since 1893; and the total number of elections in Advanced Studies has fallen from nineteen hundred and eighty-one to eighteen hundred and fifty-six. In other words, our candidates have offered less work beyond the amount required for admission.

The next two tables show, for each study, the percentage of failure, (*A*) in the complete records of the candidates, including the records of their successful Preliminary Examinations, and (*B*) in their records at Final Examinations only. In Chemistry the percentage of failure remains attractively low: —

(*A*)	1890.	1891.	1892.	1893.	1894.
ELEMENTARY STUDIES.					
English	12	14	17	13	9½
Greek	9	6	6	7	6½
Latin	3	2	4	7½	4
German	12	13	35	25	22
French	11	11	10	8	7
History (Ancient)	6	11	24	10½	6
" (Modern)	18	10	19	12	12½
Algebra	11½	10	12	10	12½
Plane Geometry	17	17	22	20	25
Physics (Descriptive)	23	25	44	30	34
" (Experimental)	14	9	12	17	15
ADVANCED STUDIES.					
Greek	10	8	8	13	17
Latin	27	24	16	19	22
Greek Composition	17	23	24	27	17
Latin "	23	23	9	9	19
German	18	31	25	21	16⅔
French	24	20½	14	21	13
Logarithms and Trigonometry	40	33½	34	40	23
Solid Geometry	31	16	23	32½	33½
Analytic Geometry	37½	22	29	33½	16⅔
Advanced Algebra	45½	37	43	11	26
Physics	11	30	14	50	33½
Chemistry	0	7	3	3½	4

(*B*) ELEMENTARY STUDIES.	1893.	1894.	ADVANCED STUDIES.	1893.	1894.
English	13	9½	Greek	13½	17
Greek	19	19½	Latin	22	22½
Latin	21½	12½	Greek Composition	34	21
German	33½	32½	Latin "	12½	26
French	16	13½	German	27	21
History (Ancient)	21	15	French	26½	16½
" (Modern)	20	19½	Log. and Trig.	47	22½
Algebra	21	31	Solid Geometry	40	36½
Plane Geometry	27	34	Analytic Geometry	33½	18
Physics (Descriptive)	33	40	Algebra	12½	33½
" (Experimental)	20	17	Physics	50	33½
			Chemistry	5	5

"Credits" in Elementary Studies are fewer this year than last; but "credits" in Advanced Studies show a gain of eighty. In Advanced Greek the number has risen from fifty-five to ninety-nine; in Advanced Latin, from forty-seven to seventy-six; in Advanced French, a less popular study, from twelve to twenty-one; in Elementary English it has fallen from fourteen to four. These figures are based on Final Examinations only; but, since English is never offered as a Preliminary Subject, the four "credits" in English must have been distributed among five hundred and five candidates: —

	1893.		1894.	
	June.	Sept.	June.	Sept.
ELEMENTARY.				
English	11	3	4	..
Greek	14	17	13	12
Latin	9	26	9	13
German	12	7	9	6
French	4	8	7	7
History (Ancient)	10	4	9	1
" (Modern)	..	2	3	1
Algebra	10	4	16	13
Plane Geometry	16	3	12	1
Physics (Descriptive)	4	..	5	3
" (Experimental)	19	2	23	1
	109	76	110	58
ADVANCED.				
Greek	51	4	91	8
Latin	39	8	69	7
Greek Composition	3	1	4	..
Latin "	8	2	3	..
German	7	2	6	..
French	8	4	15	6
Logarithms and Trigonometry	1	..	3	..
Solid Geometry	1	1	4	..
Analytic "	..	1	..	..
Algebra	2	1	..	..
Physics	..	1	1	..
Chemistry	8	3	12	7
	128	28	208	28
Total Number of "Credits" in Final Examinations	237	104	318	86

Five hundred and one candidates took Preliminary Examinations : —

Number of candidates who received certificates for examinations occupying	1890.	1891.	1892.	1893.	1894.
Less than five hours	5	13	4	2	7
Five hours	51	41	53	49	40
Six "	59	55	74	83	55
Seven "	76	80	92	90	99
Eight "	80	67	84	75	102
Nine "	29	46	48	58	74
Ten "	8	13	18	20	24
Eleven "	6	9	6	11	11
Twelve "	..	2	..	6	5
Thirteen "	3	..	3	..	2
Received certificates	320	327	382	394	419
Failed	56	101	78	73	82
Total number of candidates	376	428	460	467	501

The total number of candidates shows a gain of thirty-four since 1893; and the total number of successful candidates a gain of twenty-five. Five persons that received certificates were rejected Final candidates who seemed entitled to consideration in at least a part of their successful work.

The table showing the percentage of failure in each Preliminary subject is remarkable, this year as last, for large percentages in Advanced Studies. Where candidates are few, however, percentages are misleading : —

ELEMENTARY.		ADVANCED.	
English	Not offered as a Preliminary subject.	Advanced Greek	37½
		Latin	65½
Greek	11	Greek Composition	26½
Latin	15	Latin "	35
German	35	German	30
French	10½	French	5
History (Ancient)	9	Logarithms & Trigonometry	45
" (Modern)	25	Solid Geometry	47
Algebra	25½	Analytic "	Not offered.
Plane Geometry	29	Algebra	66⅔
Physics (Descriptive)	48	Physics	Not offered.
" (Experimental)	14	Chemistry	12½

The next table shows the number of "credits" won at these Preliminary Examinations: —

	June.	Sept.
ELEMENTARY.		
English (not offered as a Preliminary subject)	..	..
Greek	155	1
Latin	115	..
German	15	1
French	48	..
History (Ancient)	26	..
" (Modern)	2	..
Algebra	84	1
Plane Geometry	7	1
Physics (Descriptive)	2	1
" (Experimental)	10	1
	464	6
ADVANCED.		
Advanced Greek	5	..
Latin	2	..
Greek Composition	1	..
Latin "	4	..
German	4	..
French	13	..
Logarithms & Trigonometry	1	..
Solid Geometry	..	..
Analytic "	..	..
Algebra	..	..
Physics	..	..
Chemistry	3	..
	33	
	497	6
	6	
Total	503	

This table combined with the table of "credits" won at the Final Examinations (p. 86) shows that the total number of credits received at the examinations of 1894 was nine hundred and seven, five hundred of which were won in Elementary and Advanced Greek and Latin.

For the first time, the Committee on Admission Examinations exercised a censorship over all the examination-papers. In June this censorship was tentative; in September it became aggressive: but even in September it was not thorough; for it allowed one or two papers to lack clearness.

At last the College has given up that specious but futile safeguard, the certificate of moral character. This year every candidate brought from his teacher a testimonial of honorable dismissal and referred to two persons who could give information about him. These persons received from the Assistant Secretary letters of inquiry and, in many cases, replied so carefully and frankly as to be of real service to the young men's advisers. The weakness of the reference method is in chronological sequence, — instead of learning that a boy is bad in time to reject him for his badness, we are in danger of admitting him first and learning about him afterwards. Yet even this is better than accepting from him, without inquiry, a perfunctory certificate of moral character.

The members of the Administrative Board of Harvard College for 1893–94 were: the Dean of the College, Professors C. J. White, Allen, Bartlett, de Sumichrast, Lanman, Gross, Schilling, Morgan, Howard, Cummings, Marsh, and Osgood; and Doctors Snow, Marcou, and Huntington.

The disciplinary policy of the Board was much the same as in the preceding year; but action was prompter and more vigorous. Nine lazy Freshmen were put on probation before the middle of November; nine more, before the Mid-Year Examinations; nine more, immediately after those examinations; one more in February, two more in March, and two more in April. In November the probation of one Junior was closed; in December, that of two Freshmen; and later that of eight Freshmen, of whom three were sent away before the Mid-Year Examinations and three soon after. Base dealing with a fellow-student led to the withdrawal of one Junior. "Generally unsatisfactory conduct" deprived one Special Student of his privileges; and drunkenness on Commencement Day cut off another's hope of readmission. Two Seniors, three Juniors, four Sophomores, and seven Freshmen were allowed, encouraged, or required to withdraw by the constraining wisdom of their parents or the Dean. One Senior was suspended for giving a false name to a proctor, and one for disingenuousness in evading quarantine rules; two Sophomores were suspended for drunkenness and disorder, and one Sophomore and one Freshman for dishonesty in written work.

"A student who has neglected the work of any College course may be excluded from the course by the instructor with the approval of the Dean." * Last year the exclusions of regular College students were but eighteen, of which eight were from Freshman courses in

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* Regulations for Students of Harvard College: Regulation 6.

German. The pace set in these courses is so fast that the loiterer, before he knows it, is hopelessly behind. In Freshman German the youth who has accepted the dictum that "Harvard College is hard to get into but easy to stay in" soon suspects that he has been misinformed.

Occasionally exclusion is the penalty of dishonesty rather than neglect: the student who cheats in a course has forfeited its privileges and is banished from its society.

In dealing with petty cheating the Board showed its only noteworthy change of policy. Early in the year it inflicted the usual penalty for dishonesty in written work — suspension; but later, through the frank testimony of students, it became aware that this penalty was too harsh to be effective. Many an undergraduate, it discovered, regarded cribbing as boyish and shiftless rather than criminal, failed to see — even dimly — its relation to forgery, and looked on the severe punishment of it, not as a righteous judgment against an enemy to society, but as a sort of stray thunderbolt dashing down a luckless neighbor.

The discovery of this weakness in public opinion and the wish to devise a more effective treatment of cribbing led the Board to confer, through a committee, with thirty representative students. The students met the committee with straightforward courtesy, and seemed to approve the plan of the Board that the Dean should report each detected offence, together with the penalty proposed, to a few students who might have influence with the offender. The penalty would commonly be exclusion from the course in which the dishonesty occurred; and thus the Board, for a sudden and unexplained chastisement would substitute a milder external action, with the effort to educate in some degree the consciences of the culprit and his friends. The plan has been tried once or twice and is still experimental. To expose a man's dishonesty to his friends, and do it generously, requires a finer tact than can be expected of anybody; but the object in view is worth pains and risk.

Two things, good in themselves, degrade the undergraduate standard of intellectual work — athletics and College Societies. Last year the monstrous methods of training and coaching for football rendered the low academic records of our football players less blameworthy than pitiable. Now that our athletes seem to have abandoned the policy of fitting a man for a great contest by exhausting his body and torpifying his mind, it is possible for a football player to study; on the other hand, it is often almost impossible for a newly elected member of a college society to study during the long initiation. The ceremony itself, though not half so black as it is painted and seldom worse than foolish, frequently consumes several days of the critical time at the end of the Freshman year or the beginning of the Sophomore, shows a selfish disregard of the novice's welfare, and threatens the academic existence of a student on probation — as social favorites are apt to be. Our students do not as a rule lack courage; but in courage to hazard popularity by protests against low conventional standards of duty, they are, with a few marked exceptions, disappointing.

Scholarships, except in cases of special claim, are given to poor men only; yet the evidence of poverty has often been so vague as to embarrass the committee that examines it. To question a youth minutely about his father's income is distasteful; but the Committee on Scholarships administers an important trust and should subordinate sentiment to sound business principles. This year every applicant for a scholarship, unless nominated by the donor, filled a blank form of application. *

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* *HARVARD COLLEGE.*

Application for a Scholarship.

Scholarships, as a rule, are given only to students of high rank who cannot, unaided, meet the expenses of a College education. Since the Committee on Scholarships must consider the applicant's need of aid, the blanks in this form must be filled with specific information, and the information must be confirmed by the signature of parent or guardian. So far as practicable, it will be treated as confidential.

The undersigned, in consideration of his College record, and of the facts set forth in this application, respectfully asks the Faculty of Arts and Sciences to award him a scholarship for the year 1894–95.

Signature ....
Class ....
Cambridge address ....
Date ....

1. **Name in full** ....
2. **Home address** ....
3. **Date of birth** ....
4. **Place of birth** ....
5. **Father's name in full** ....
6. **Mother's maiden name in full** ....
7. **Is either parent dead ?** ....
8. **Parents' occupations** ....
9. **Number and ages of brothers and sisters** ....
10. **Estimated income of the family** ....
11. **Amount of money on which the applicant may count for 1894–95** ....

Forty thousand dollars in scholarships and other aids is annually distributed among undergraduates. This sum, though an imposing total, is not large in proportion to the number of worthy applicants. To have superfluous charity funds, — to pay all the expenses of such youths as will submit to education for the sake of support, — is a misfortune to any institution of learning; but it is almost an equal misfortune to see good men wearing out their health for education, with no relief in their sorest need. Though high character combined with distinguished ability nearly always insures the completion of the College course, yet the competition for aid is so sharp, and the competitors are so able, that even excellent men of good ability may win nothing.

If a considerable number of good students get little aid, it follows that the man both needy and dull has in Harvard College as elsewhere a dismal struggle. In spite of the Secretary's employment registry, jobs that undergraduates may do in or about Cambridge between recitation-hours are never half so plentiful as the men who want them, and cannot be counted on as livelihood. I would encourage any vigorous youth who can see his way through the Freshman year to enter Harvard College, — he can find no better place, no place so good; but notwithstanding wonderful instances of students who have come penniless and have graduated with marked physical and mental gain, I would never tempt a youth who has measured neither

12. Sources from which this money is expected..
13. Cost of College room for the present year..
14. School or college from which the applicant came to Harvard College.
15. Year of admission to a class in Harvard College..
16. Occupation in view after graduation ....
17. Scholarship, if any, to which the applicant has a special claim ....
18. Ground of this claim. [The applicant should state his reasons in full. Any defect in the statement may invalidate the claim.]
19. Remarks. [Under this head the applicant should state briefly any facts bearing on this application which he has not stated already.]
20. Names and addresses of two persons — preferably teachers or employers — from whom information about the applicant may be obtained.

CERTIFICATE.

[To be signed by Parent or Guardian.]

I [*Name*].., [*Occupation*]..
of [*Residence*]....................................., the [*Parent or Guardian*]...............................
of the applicant, hereby declare that I have read the foregoing statements; and that, to the best of my knowledge and belief, they are correct.

(*Signed*)..

Dat ....

his power of achievement nor his power of endurance to enter keen intellectual competition benumbed in mind because ill-nourished in body, — I would never urge him to come or stay without ample and wholesome food.

In my last report I considered the impropriety of rewarding for high scholarship the students who, as private tutors, abet low scholarship — who hold out to lazy men the hope of eleventh-hour rescue from the just consequence of laziness. Hereafter the Committee on Pecuniary Aid may be guided in this matter by a resolution which the Faculty adopted in June, 1894: —

> "The Faculty discountenances the reviews known as 'Seminars,' conducted immediately before examinations, the unauthorized publication and sale of lecture-notes, and all 'coaching' that abets students in the neglect of regular work."

Though the Faculty could not suppress the "Seminar," it could and did set students to thinking.

In a part of one end of University Hall are the offices of the President, three Deans, the Secretary, and (in a kind of gangway) the Recorder. The subordinate work in these offices is as good as may fairly be expected of a half-dozen clerks, all under the Recorder, each subject to the personal direction of from one to ten other officers, and each accessible to anybody. Better organization is much to be desired; but better organization means expense. The need of more clerks is not so serious as the need of a local habitation for the clerks that we have. Our rooms are ill-appointed and disconnected. We need a building with ample and convenient space for all the Cambridge offices of the University; and we need for each office a thorough modern equipment. Progressive in everything else, we can ill afford to be antiquated in our book-keeping.

For the lack of system in the Office the spirit of the University is in part responsible. There is more than a fanciful connection between the individual freedom that the elective system fosters and the want of "team-play," alike in our athletics, in our intellectual aims, and even in our administrative work. Toleration is with us so strong that every teacher may live untrammelled by any prejudices except his own. In this freedom, which we justly prize, we are prone to forget that "red tape" is often a question-begging name for the less inviting part of duty. Only genius incapable of remembering rules should be exempt from them. To make the office what it should be, we need better quarters, better organization, and instructors who recognize their lower duties as clearly as their higher ones.

In view of the Regulation that, — "To obtain credit in a course of study, or to count the course towards fulfilment of the requirements for the degree, the student must have attended both the mid-year and the final examination," it is noteworthy that the Mid-Year Examination is omitted in more than a fifth of our courses. In some studies — such as "Oral Discussion" — every exercise is an examination; and the Mid-Year," even if practicable, would be of little weight; in others the "Mid-Year" is omitted without obvious justification. It is doubtful, also, whether the practice in some courses, of substituting for the Final Examination long problems to be worked out at home, may be defended under the statute that requires "thorough public examination." In the higher mathematics, however, the "long paper" may be the only efficient test.

The refusal of the Law School to count toward the LL.B. work done in the School by members of the College has forced the student who is bent on getting both the A.B. and the LL.B. in six years, to spend the fourth of these years as a Law Student. Thus the Law School does its part in tempting students to crowd into three years the work now required for the degree of Bachelor of Arts. Graduation from the College in three years is for good scholars only; but the indifferent scholar who has completed eighteen courses without too many "D's" seldom fails to get leave of absence for the fourth year, during which the Faculty demands of him nothing but existence. Thus the College, while it helps some worthy men to an early start in a profession or in business, runs the risk of sacrificing thoughtful scholarship to the rapid transit theory.

To offset the evils that I have examined so openly, we see, among other things, a marked improvement in our students. Slowly and surely the undergraduates are taking a more reasonable and manly view of all College questions in which they are consulted. If we give them the confidence they are earning, we may in time rely on a better College public opinion than we have ever known.

L. B. R. BRIGGS, *Dean.*

THE LAWRENCE SCIENTIFIC SCHOOL.

To the President of the University:

Sir: — The increase in the number of students attending the Lawrence Scientific School, which has been remarked in these reports during the seven preceding years, has continued during the academic year 1893–94. The number of students registered in each of these years has been as follows: —

1887–88	20	1891–92	118
1888–89	35	1892–93	181
1889–90	65	1893–94	293
1890–91	88		

Registration in 1893–94 by departments: —

Civil Engineering	59	Biology	20
Electrical Engineering	59	General Science	72
Mechanical Engineering	9	Anatomy, &c.	29
Chemistry	20		
Geology	25		293

This increase in attendance follows upon a long period during which the number of students varied between one and three score; at no time from its foundation until 1890 did the number enrolled exceed eighty, and during the twenty years immediately preceding 1890 the average attendance was about thirty. In 1886 there were but fourteen persons listed as in the school, and of these but eight were candidates for a degree.

When the school first began to increase in numbers it was supposed by those who were the best informed concerning its affairs that the gain was due to the considerable improvements in its administration, which had previously been effected. Although there has been many important extensions in the range and scope of the instruction which the school provides, and a greater efficiency in its executive work, these amendments have been demanded, and to a great extent made possible, by the enlargement of its classes. It now appears probable that the augmentation is largely due to a change in the state of mind of those who have the direction of youths as to the conditions under which a young man should seek a training in some one of the branches of engineering, or in other employments demanding an education in natural science.

When technical education began to be established in this country, the motives and the conditions of the colleges were such that those who were interested in founding science schools, in many instances, and with good reason, doubted the advisability of joining these institutions to the collegiate establishments. At that time all the most successful academic seats gave a very limited education, the aim of which was distinctly and with a declared purpose, to keep the student from carrying out any plan of study that might prepare him for professional duty or even fit him, in a special way, to enter on the work of the professional schools of the university of which the college formed a part. The traditions of the academic boards and of the students whom they controlled being thus in a distinct way opposed to the objects of the science schools, there was much reason to question the expediency of joining the new foundations to the old. Moreover, at this stage in the development of the higher education in this country, the college had little to give a scientific school except its name, and the service of a few instructors who might be employed in teaching language or mathematics. Therefore it came about that there was, for a time, a tendency to separate the institutions devoted to technological work from the universities.

Since the foundation of technical schools in the United States the very rapid extension of the elective system in the greater colleges has altogether changed their attitude towards professional education. About one-third of the Faculty of Arts and Sciences of this University consists of teachers who may be classed as belonging in the departments of applied science and being thereby related in motive to the interests of the technical schools. A large part, if not the majority, of the college students now enter on their course of study with the determined purpose to fit themselves for a calling by electing subjects which may make them ready for the professional schools. Moreover, the elective system has made it necessary for the College to create, at a great cost, a number of laboratories and other means of scientific research, all of which are suited to the needs of applied science. The development of these establishments for practical enquiry, with their associated museums, has gone so far that in this University they represent an aggregate investment of about four million dollars. Similar changes have taken place in all the stronger universities of this country.

The changes noted above in the condition of the colleges have not only removed the objections which could have been urged against them as places in which to carry on technical instruction; but they have, by enlarging their spirit, made them the fit seats for the development of men who are to be engaged in any learned calling. In them the student of any technical science has a chance to acquire a share of the diverse motives which make for culture. It is reasonable to suppose that the people of this country, who have ever shown a very keen and discerning interest in their colleges, understand the present fitness of these reformed institutions to deal with the modern education in economic science. To their judgment we may attribute the recent noteworthy gain in the resort to science schools which are connected with the universities. Thus the growth of the Lawrence School, which is but the most prominent instance of a development that is going on in all similarly placed establishments of a like nature, indicates that our people are disposed to commit to the care of their universities all those new branches of the higher education which are demanded by the modern development of natural science.

Looking upon a school of applied science as one of the divisions of a university which is to give the student a specific training leading to a vocation, it is evidently desirable to provide groups of studies which shall meet the needs of all the employments which demand such an education. Therefore the Administrative Board of the Lawrence Scientific School has in successive years recommended the establishment of several new departments or sub-departments, each providing a four-years' course of instruction. In the academic year 1894–95, additional four-years' courses are to be begun in Mechanical Engineering, Mining Engineering, Architecture, and Science for Teachers; the last named department being designed to afford a training suited for the increasing class of persons who intend to teach natural science in secondary schools. A number of other departments press for recognition. Among those which have been suggested by applications for instruction may be noted Naval Architecture, Manufacturing Chemistry, Forestry, Astronomy, and Military Science.

Some steps have been taken towards instruction in the subject of Military Science. An application was made to the Secretary of War for the detail of an officer of the Federal Army who should teach military tactics and the art of war in this School; the classes to be open to all the members of the University. This duty has been assigned to Mr. Wirt Robinson, 1st Lieut. 4th U. S. Artillery, whose work will begin at the opening of the academic year. At first the instruction in this department will be elective, and will count for the degree in but one of the four-years' groups in the School, viz., that of General Science. On consultation with the Adjutant-General of this State and with the General commanding the Federal Army, it appears on many accounts desirable for the School to provide a system of instruction which would enable a student to obtain a good general education and with it a knowledge of military affairs such as would fit him to be a useful officer of the militia.

Owing to the position of the Lawrence School under the Faculty of

Arts and Sciences, any of the courses of instruction offered by that body are available as units in any project of courses of study to be required in the new departments of the School. On this account the cost of establishing such departments is much less than it would be if all the provision in the way of instruction had to be made anew. Thus in planning the four-years' course in Architecture it was found that even as regards the professional parts of the work, the instruction in freehand drawing and in the history of the Fine Arts was already established, and it did not need to be in any way changed in order to fit it to the needs of the new course.

The increase in the number of four-years' groups makes the need of additional housing for the school very urgent. The requirements of the instruction in Architecture have been temporarily met by converting to its use the wooden building in Holmes Field, which forty years ago sheltered the Department of Engineering, and then was in succession used by Louis Agassiz for his museum and laboratory, the Zoölogical Club, the Hasty Pudding Club, and the Department of French. This building has been thrice moved and could not be expected to withstand another transportation. In its present site it is inconveniently remote from the general library and the new Art Museum, with both of which the Department of Architecture should be in ready communication.

The needs of the Departments of Engineering have temporarily been provided for in the building known as the old Gymnasium, which has been divided into three stories, the lower used for the boilers, engines, and other heavy apparatus, and the upper for drawing and lecture rooms. These quarters promise to be for the present satisfactory, but with the growth of the school they are not likely to prove adequate for more than two years. It is of great importance to the proper development of the Department of Engineering that all the work in the several courses should be done under one roof, in a building planned for its use.

In connection with the instruction in Highway Engineering a number of pieces of apparatus have been devised and constructed for the purpose of testing stones which may be used for road building. These instruments have already proved of considerable value to the Highway Commission of this Commonwealth. There is reason to hope that the method of work which has been adopted may result in obtaining important constants for use in determining the value of road materials. The School is now in an advantageous position in relation to the development of this branch of Engineering.

The next addition to the resources of the Department of Engineering should be a laboratory for the use of teachers and students in the course of Mining Engineering: the cost of the apparatus, in addition to that which is already provided, will on the most economical scale be beyond the present resources of the School. It should be said, in this connection, that the officers of the School are opposed to the plan which has often been adopted of purchasing machinery to illustrate the diverse processes of the technical arts. They recognize the fact that such pieces of apparatus soon become antiquated and that the lessons which they teach can, in most instances, be better learned in shops, at furnaces, or in mines, during the summer work, which the student is now called on to do in the Engineering courses. It is the purpose to limit the tools of the Engineering laboratories to such as may serve for experiments, for the illustration of principles, and for practice in testing; even with this limitation the cost of such establishments is necessarily great.

It seems desirable to raise the grade of the admission examinations so that the students may enter clear of most of the requirements of the first year, which are substantially the same for all its departments. By relegating the training in English, French, German, Elementary Mathematics, and Physics, to the secondary schools, students could, when they join the University, at once begin their professional work. The rapid increase in the number of students seeking admission by way of examinations, as is shown by the following table, gives reason to hope that it may soon be expedient to make the change, the most serious question being as to the number of fitting schools which will be able to provide the necessary training.

CANDIDATES FOR ADMISSION BY EXAMINATION.

	1893.	1894.
June	30	61
September	28	70
Total	58	131

In case the ordinary term of residence for the degree of S.B. is thus reduced to three years, it will be desirable to provide additional advanced instruction leading to the grade of Master of Science, a degree having a status comparable to that of Master of Arts in the academic course.

The discipline of the school has been satisfactorily maintained; but during the year three students have been sent away for misconduct, and a number of special students, twenty-one in all, were denied readmission. It is now the settled policy of the Administrative Board to limit this part of the attendance on the School to those persons, of some maturity and of proper training, who may desire to obtain a special education in some particular field, and to those who, owing to unavoidable hindrances, have not been able to compass the admission examinations, though they have fairly proved their capacity to take up a large part of the work which is demanded of candidates for a degree. A special student in the last mentioned class is expected to attain regular standing; and his failure to do so at the end of his first term of residence affords presumptive evidence that he is not making due use of his privileges.

Owing to the fact that many of the students of the Lawrence School come from families having very limited means, there has been much need of help for them. As yet the School has no Scholarship Foundations, the only available aid being from the twenty-four University Scholarships, which are equivalent to the remission of the bills for tuition, and a small loan fund obtained in part from subscriptions, and in part by a grant of four hundred and fifty dollars made by the Corporation in lieu of additional Scholarships. Loans from this fund amounted last year to $1078, and from it eleven students were awarded sums varying from $20 to $280 each. It seems evident to those having charge of these loans that this method of giving aid is more satisfactory than that afforded by the Scholarship system. The help given under a loan system should always be based on a careful study of the means which the student can command from home or by incidental work. Such an inquiry often shows that the applicant can be kept in the School by the loan of less than one-third of his tuition-fees; while it occasionally happens that an able man in his last year of study, when he has exhausted his means of support, should be helped to the extent of two or three hundred dollars in order that he may complete his training. The effect of lending a student a definite sum, the amount being based on a careful enquiry into his resources and needs, is evidently more wholesome than the effect of granting him outright a lump sum in the form of a Scholarship. Although the experiment with the loan fund of this School has been essayed for but two years, there seems reason to hope that the percentage of repayments may be larger than it has been in the case of similar funds which are held for the benefit of College students. So far the amount loaned is $1511, and the amount repaid is $183. It should be said that these loans are made without security and without interest until the recipient has left the School: after that time interest at four per cent. is charged. Next to the need of money for the proper equipment of laboratories of mining and marine engineering, and of a new building for the accommodation of the various Engineering courses, the increase of this loan fund seems to be the most desirable addition to the resources of the School.

N. S. SHALER, *Dean.*

THE GRADUATE SCHOOL.

To the President of the University:

Sir, — I have the honor of presenting my report on the state of the Graduate School for the academic year 1893–94.

The number of students in the School was two hundred and fifty-nine, of whom two hundred and forty-eight were classed as Resident Students, — that is, as students attending instruction or carrying on studies at the University, — and eleven as Non-Resident Students. The subjoined table exhibits the usual classification of the students of the School, according to various lines of division, for the two successive academic years 1892–93 and 1893–94. The figures are in a few cases subject to a slight uncertainty, as has been stated in previous reports. It is not always possible to determine clearly whether a given student, engaged in higher research, is to be counted as doing full work for the whole year, in his relation to the School; or to what department of study one working in two cognate branches ought most properly to be referred. These questions have been decided in each case according to my best judgment, and after suitable inquiry: —

	1892–93.		1893–94.	
Resident Students doing full work in the School for the whole academic year	127		162	
Resident Students not doing full work, or not working for the whole year as resident students	73	200	86	248
Non-Resident Students holding fellowships	9		10	
Non-Resident Students not holding fellowships	7	16	1	11
Students principally engaged				
In Semitic Languages and History	3		6	
In Classical Philology and Indo-Iranian Languages	25		34	
In English and Modern Languages	34		42	
In Philosophy (including Teaching)	20		35	
In History and Political Science	40		44	
In the Fine Arts (including Architecture)	2		5	
In Music	1		1	
In Mathematics	24		19	
In Physics	8		4	
In Chemistry	14		12	
In Natural History	37		38	
In American Archaeology and Ethnology	2		2	
Unclassed	6	216	17	259

First-year students	125		151	
Second-year students	59		63	
Third-year students	24		31	
Fourth-year students	4		10	
Students in a fifth or later year	4	216	4	259
A.B.'s and S.B.'s of Harvard University, and of no other institution	84		103	
A.B.'s and S.B.'s (and holders of similar degrees) of other institutions and also of Harvard University	26		26	
Students not holding the Harvard degree of A.B. or S.B.	106	216	130	259
Students holding the Harvard degree of A.M., Ph.D., or S.D.	62		69	
Students holding the Harvard degree of A.B. or S.B., but not of A.M., Ph.D., or S.D.	69		83	
Students holding no Harvard degree in Arts, Philosophy, or Science	85	216	107	259

In addition to the students registered in the Graduate School, the Catalogue for 1893–94 contains the names of thirty-nine graduates of colleges, scientific schools, or professional schools registered as undergraduate students of Harvard College, and of six registered as students of the Lawrence Scientific School. The whole number of graduate students under the charge of the Faculty of Arts and Sciences was therefore three hundred and four. Forty-three students not registered under the charge of the Faculty of Arts and Sciences, — namely, thirty-nine students of the different professional schools, applying on the ground of professional studies, and four past students of Harvard College, not members of the Graduate School, but applying on the ground of graduate studies, — presented themselves before the Faculty of Arts and Sciences at the close of the year 1893–94 as candidates for the degree of Master of Arts; of whom thirty-one were also candidates for a professional degree, and twelve were candidates for the degree of A.M. alone.

I regret to have to report one death among the students of the School during the year 1893–94.

Frank Fay Howe was born at South Framingham, in this State, 1 June 1868. He attained the degree of A.B. *cum laude* at this University in 1892. He then entered the Graduate School, as a student of American History, and received the degree of A.M. in 1893. Professor Channing selected him as his Private Assistant for the year 1893–94. He became seriously ill in December 1893, and was absent from the University from that time. But his return was constantly hoped for; and his death, which took place 7 February 1894, was unexpected till shortly before its occurrence. He had done excellent work as a student, and enjoyed the high respect of all who knew him.

The number of students in the Graduate School admitted to any *degree*, and the number of students in other departments of the University admitted to the degree of A.M. are stated in the following table, for the years 1893 and 1894: —

	1893.		1894.	
Graduate students admitted to A.B.	17		19	
Graduate students admitted to A.M.	58		82	
Graduate students admitted to Ph.D	12		16	
Graduate students admitted to S.D.	1	88	2	119
Seniors admitted to A.M., with A.B.	1		0	
Past Seniors admitted to A.M.	0		4	
Professional students admitted to A.M. on special courses of study	8		5	
Professional students admitted to A.M. with a professional degree	23	32	24	33
Total of the above list		120		152
Deduct Graduate students admitted to A.B.		17		19
Total number admitted to A.M., Ph.D., and S.D.		103		133

The total number of persons admitted to the degrees of A.M., Ph.D., and S.D. may be classified as follows, relatively to their previous graduation as Bachelors of Arts or Science: —

	1893.		1894.	
Harvard Bachelors of Arts or Science, not previously graduated elsewhere	47		67	
Harvard Bachelors of Arts or Science, previously graduated elsewhere	17		22	
Students not Harvard Bachelors of Arts or Science	39	103	44	133

The following are the names of the students admitted to the degree of *Doctor of Philosophy* or *Doctor of Science*, at Commencement 1894: —

To Ph.D.

Charles Montague Bakewell, A.B. (*Univ. of California*) 1889, A.M. (*Ibid.*) 1891, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–92, 1893–94. Non-Res. Gr. Stud., 1892–93.

Philosophy (Metaphysics). *Thesis*, "*Hegelianism and Man.*"

Now holds the Walker Fellowship, and is continuing his studies at Berlin.

Francis Kingsley Ball, A.B., 1890, A.M. 1891. Res. Gr. Stud., 1890–92, 1893–94. Instructor in Latin, 1892–93.

Philology (Classical Philology). *Thesis*, "*De Frenis apud Antiquos.*"

Now Professor of Greek at the University of North Carolina, Chapel Hill, N. C.

John Bigham, A.B. (*Amherst Coll.*) 1887, A.M. (*Ibid.*) 1890, D.B. (*Yale Univ.*) 1892, A.M. (*Harvard Univ.*) 1893. Res. Gr. Stud., 1892–94. Professor of Greek, 1888–89, Ripon Coll., Wis.

Philosophy (Experimental Psychology). *Thesis*, "*An Experimental Study of Memory.*"

Now Instructor in Philosophy at the University of Michigan, Ann Arbor, Mich.

Frank Dyer Chester, A.B. 1891, A.M. 1892. Res. Gr. Stud., 1891–94. Assistant in Semitic Languages, 1892–94.

Philology (Semitic Languages; especially Arabic). *Thesis*, "*The Book of Songs.*"

Now Assistant in Semitic Languages at this University.

George Amos Dorsey, A.B. (*Denison Univ., O.*) 1888, A.B. (*Harvard Univ.*) 1890. Res. Gr. Stud., 1890–91, 1893–94. Non-Res. Gr. Stud., 1891–93. Hemenway Fellow, 1893–94. Superintendent, Section of Archaeology, World's Columbian Exposition, 1892–93.

American Archaeology and Ethnology (Peruvian Archaeology). *Thesis*, "*An Archaeological Study based on a personal exploration of over one hundred graves at the Necropolis of Ancon, Peru.*"

Now Assistant in Anthropology at this University.

Edward Fulton, A.B. (*Dalhousie Univ., N. S.*) 1889, A.B. (*Harvard Univ.*) 1891, A.M. (*Ibid.*) 1892. Res. Gr. Stud., 1891–94. Assistant in English, 1892–94.

Philology (English). *Thesis*, "*On the Authorship of the Anglo-Saxon Poem, The Phœnix.*"

Now Professor of English at Wells College, Aurora, N. Y.

James Geddes, Jr., A.B. 1880, A.M. 1889. Res. Gr. Stud., 1887–94. Instructor, 1888–90, and Assistant Professor, 1890–91, at Boston University.

Philology (Romance Languages). *Thesis*, "*Study of an Acadian Dialect.*"

Since 1891, Professor of Romance Languages and Philology at Boston University.

Charles Burton Gulick, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–92, 1893–94. Instructor in Greek, 1892–93.

Philology (Classical Philology; especially Greek). *Thesis*, "*De Scholiis Aristophaneis Quaestiones Mythicae.*"

Now holds a Rogers Fellowship, and is continuing his studies at Berlin.

Willis Hatfield Hazard, A.B. (*Haverford Coll., Pa.*) 1887, Gr. (*Gen. Theol. Sem., N. Y.*) 1891, A.M. (*Harvard Univ.*) 1892. Res. Div. Stud., 1891–92. Res. Gr. Stud., 1892–93.

Philology (Semitic Languages). *Thesis*, "*The Forty-second and Forty-third Psalms.*"

Now resident at West Chester, Pa.

Charles Atwood Kofoid, A.B. (*Oberlin Coll., O.*) 1890, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–94. Morgan Fellow, 1893–94.

Natural History (Zoölogy). *Thesis*, "*Cleavage in Limax.*"

Now Instructor in Animal Morphology, University of Michigan, Ann Arbor, Mich.

George Edgar Ladd, A.B. 1887, A.M. 1888. Res. Gr. Stud., 1887–89, 1891–94. Past Assistant Geologist, U. S., Texas, and Mo. Geol. Surveys. Assistant in Geology, 1892–94.

Natural History (Geology). *Thesis*, "*A Preliminary Report on the Fire Clays of the United States.*"

Now continuing his studies at the University of Munich.

Maurice Whittemore Mather, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890-91, 1892–94. Professor of Latin, 1891-92, Georgetown College, Ky.

Philology (Classical Philology). *Thesis*, "*Quo Modo* iaciendi *verbi composita in praesentibus temporibus enuntiaverint et scripserint antiqui quaeritur.*"

Now continuing his studies at the University of Berlin.

Curtis Hidden Page, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–91, 1892–94. Instructor, 1891-92, Western Reserve University, Ohio. Instructor in French, 1893-94, in this University.

Philology (English and German Literature). *Thesis*, "*Carlyle: his relation to the German Thinkers, especially Fichte. With a Carlyle Bibliography.*"

Now continuing his studies at Paris.

Fred Norris Robinson, A.B. 1891, A.M. 1892. Res. Gr. Stud., 1891–94.

Philology (English). *Thesis*, "*On the Modal Syntax of Finite Verbs in the Canterbury Tales.*"

Now Instructor in English in this University.

Elliot Folger Rogers, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–91, 1892–94. Assistant in Chemistry, 1893–94.

Chemistry (Inorganic Chemistry). *Thesis*, "*Investigation of the Atomic Weight of Zinc.*"

Now holds a Parker Fellowship, and is continuing his studies at Leipzig.

Arthur Wisswald Weysse, A.B. 1891, A.M. 1892. Res. Gr. Stud., 1891–94.

Natural History (Zoölogy). *Thesis*, "*On the Blastodermic Vesicle of Sus Scrofa Domesticus.*"

Now holds a Parker Fellowship, and is continuing his studies at Leipzig.

To S.D.

Harry Sands Grindley, S.B. (*Univ. of Illinois*) 1888. Res. Gr. Stud., 1892–94. Morgan Fellow, 1893-94. Assistant in Chemistry, 1892–93.

Chemistry (Organic Chemistry). *Thesis*, "*Action of Alcoholates on Quinones.*"

Now Assistant Professor of Chemistry at the University of Illinois, Champaign, Ill.

Winfield Scott Nickerson, S.B. 1890. Res. Gr. Stud., 1890–94. Assistant in Zoölogy, 1891–94.

Natural History (Zoölogy). *Thesis*, "*On Stichocotyle Nephropis, Cunningham, a Parasite of the American Lobster.*"

Now Professor of Biology, University of Colorado, Boulder, Col.

I have next to report on the *Fellowships and Scholarships* belonging to the Graduate School, and given to students in that School on nomination by the Faculty of Arts and Sciences. Nineteen fellowships and forty-six scholarships were held in the year 1893–94. Appointments have been made to eighteen fellowships and forty-five scholarships for the year 1894–95. Two scholarships are at present vacant; but are likely to be filled in a few weeks.

In the year 1893–94, ten fellowships were held by Non-Resident Students having permission to pursue their studies abroad; while nine fellowships were held by Resident Students. For the year 1894–95, twelve holders of fellowships have permission to study abroad; and six are Resident Students. All the scholarships require residence, by the terms of their foundation.

I beg to refer to my last annual report for a full statement concerning the mode of appointment to fellowships and scholarships and the principles governing the Faculty in their selection.

The following tables contain the usual statistics relative to applications and appointments to fellowships and scholarships for the two successive academic years, 1893–94 and 1894–95. Only those fellowships and scholarships which are given on nomination by the Faculty of Arts and Sciences are here considered; and none are counted as appointees but those who actually held or are holding appointments in the academic year for which they received them: —

	For 1893–94.		For 1894–95.	
Spring applicants for reappointment or promotion .	49		38	
Spring applicants for a first appointment	208		226	
Later applicants	44	301	30	294
Appointed to fellowships	19		18	
Appointed to scholarships	46		45	
Appointed instructors or assistants	15	80	22	85
Deduct for repetitions		7		8
		73		77
Entered or continued in the Graduate School without any of the above-named appointments	62		58	
Entered undergraduate classes	9		4	
Entered Scientific School	1		1	
Entered professional schools	9	81	5	68
At the University in the year following application .		154		145
Not at the University		147		149
		301		294

	For 1894–95.		For 1893–94.	
	Applicants.	Appointees.	Applicants.	Appointees.
Students of Philology	108	21	91	19
Students of Philosophy, History, and Political Science	95	16	101	17
Students of Music, Fine Arts, Architecture, etc.	2	1	4	2
Students of Mathematics, Physics, and Chemistry	47	15	56	12
Students of Natural History	42	12	38	13
Students in other branches, or proposing mixed courses, or without statement of purpose	7	0	4	0
	301	65	294	63
Students of the Graduate School at the time of application	78	43	100	43
Students of Harvard College at the time of application	59	6	38	7
Students of Lawrence Scientific School at the time of application	1	0	0	0
Students of Professional Schools at the time of application	2	1	2	0
Former students in some department of the University	20	5	16	3
Persons never previously connected with the University	141	10	138	10
	301	65	294	63
Harvard A.B.'s, S.B.'s, A.M.'s, Ph.D.'s, and S.D.'s, not also graduated elsewhere	47	23	46	17
Harvard A.B.'s, S.B.'s, A.M.'s, Ph.D.'s, and S.D.'s, previously graduated elsewhere	26	13	22	11
Graduates of other institutions, and not of Harvard University	168	25	177	30
Harvard undergraduates not already graduated elsewhere	31	4	24	5
Undergraduates of other institutions and other non-graduates	29	0	25	0
	301	65	294	63

The fellowships — this term always including the Tyndall Scholarship, — have larger incomes than the scholarships, and a higher order of distinction attaches to them. It is my custom to name individually, in each annual report, the holders of fellowships for the year reported on, and the persons appointed to fellowships for the next following year, with a statement of the studies which they have pursued or are to pursue, and of their places of study. All the fellowships were held, throughout the year 1893–94, by the persons named, as appointed for that year, in my report for 1892–93. The following is a list of the persons, thus named, who *withdrew from fellowships* at the close of the year 1893–94. The names of those *reappointed* will be found below, in the list of appointments for 1894–95: —

Withdrew from the Harris Fellowship.

Evarts Boutell Greene, A.B. 1890, A.M. 1891, PH.D. (History) 1893. Assistant in History, 1891–93. Res. Gr. Stud., 1890–93. I. year of incumbency. Studied *History and Political Science* at the University of Berlin. Now Professor of History, University of Illinois, Champaign, Ill.

Withdrew from a Rogers Fellowship.

Richard Clarke Manning, Jr., A.B. 1888, A.M. 1892. Res. Gr. Stud., 1891–92. II. year of incumbency. Studied *Classical Philology* at the University of Leipzig. Now Instructor in Latin at this University.

Withdrew from Parker Fellowships.

Walter Louis Jennings, A.B. 1889, A.M. 1890, PH.D. (Chemistry) 1892. Assistant in Chemistry, 1889–92. Res. Gr. Stud., 1889–92. I. year of incumbency. Studied *Chemistry* at the University of Berlin. Now Assistant Professor of Chemistry, Worcester Polytechnic Institute, Worcester, Mass.

George James Peirce, S.B. 1890., PH.D. (*Univ. of Leipzig*) 1894. Assistant in Botany, 1890–92. Res. Gr. Stud., 1890–92. II. year of incumbency. Studied *Botany* at the University of Leipzig, where he took the degree of PH.D. *magna cum laude.* Now completing certain botanical work at this University.

Withdrew from the James Walker Fellowship.

Pitt Gordon Knowlton, A.B. (*Oberlin Coll., O.*) 1890, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–93. II. year of incumbency. Studied *Philosophy* at the University of Berlin. Now Assistant in Philosophy, Ohio State University, Columbus, O.

Withdrew from Morgan Fellowships.

James Waterman Glover, L.B. (*Univ. of Michigan*) 1892. Res. Gr. Stud., 1892–93. II. year of incumbency. Studied *Mathematics* at this University. Now continuing his studies in the Graduate School.

Harry Sands Grindley, S.B. (*Univ. of Illinois*) 1888, S.D. (*Harvard Univ.*, Chemistry) 1894. Assistant in Chemistry, 1892–93. Res. Gr. Stud., 1892–94. I. year of incumbency. Studied *Chemistry* at this University. Now Assistant Professor of Chemistry, University of Illinois, Champaign, Ill.

David Frank Houston, A.B. (*So. Carolina Coll.*) 1887, A.M. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1891–94. II. year of incumbency. Studied *History and Political Science* at this University. Now Professor of Economics, University of Texas, Austin, Texas.

Charles Atwood Kofoid, A.B. (*Oberlin Coll., O.*) 1890, A.M. (*Harvard Univ.*) 1892, PH.D. (*Harvard Univ.*, Zoölogy) 1894. Res. Gr. Stud., 1891–94. I. year of incumbency. Studied *Zoölogy* at this University. Now Instructor in Animal Morphology, University of Michigan, Ann Arbor, Mich.

Paul Elmer More, A.B. (*Washington Univ., Mo.*) 1887, A.M. (*Ibid.*) 1891, A.M. (*Harvard Univ.*) 1893. Res. Gr. Stud., 1892–94. I. year of incumbency. Studied *Classical and Indo-Iranian Languages* at this University. Now Assistant in Sanskrit at this University.

Withdrawn from the Henry Lee Memorial Fellowship.

George Ole Virtue, A.B. (*Kansas State Univ.*) 1892, A.B. (*Harvard Univ.*) 1892. Res. Gr. Stud., 1892–94. I. year of incumbency. Studied *Political Economy* at this University. Now Instructor in Economics at this University.

Withdrew from the Ozias Goodwin Memorial Fellowship.

George Daniel Hammond, A.B. 1893. I. year of incumbency. Studied *Constitutional and International Law* at the University of Berlin. Now Instructor in History, St. Lawrence University, Canton, N. Y.

The following is a list of the persons *appointed to fellowships* for the year 1894–95 : —

The Harris Fellowship.

Walter Raymond Spalding, A.B. 1887, A.M. 1888. Res. Gr. Stud., 1887–88. Instructor, 1888–92, St. Mark's School, Southborough. I. year of incumbency. Is studying *Musical Theory and Composition* at the National Conservatory at Munich.

The Rogers Fellowships.

Charles Burton Gulick, A.B. 1890, A.M. 1891, PH.D. (Classical Philology) 1894. Instructor in Greek, 1892–93. Res. Gr. Stud., 1890–92, 1893–94. I. year of incumbency. Is studying *Classical Philology* at the University of Berlin.

George Andrew Reisner, A.B. 1889, A.M. 1891, PH.D. (Semitic Languages and History) 1893. Assistant in Semitic Languages, 1891–93. Res. Gr. Stud., 1890–93. II. year of incumbency. In 1893–94, pursued *Semitic Studies* at the University of Berlin. Now continuing them at the same place.

The Parker Fellowships.

George Ashley Campbell, S.B. (*Mass. Inst. of Tech.*) 1891, A.B. (*Harvard Univ.*) 1892, A.M. (*Ibid.*) 1893. Res. Gr. Stud., 1891–93. II. year of incumbency. In 1893–94, pursued the study of *Mathematics* at the University of Göttingen. Now continuing it at the same place.

Elliot Folger Rogers, A.B. 1890, A.M. 1891, PH.D. (Chemistry) 1894. Assistant in Chemistry, 1893–94. Res. Gr. Stud., 1890–91, 1892–94. I. year of incumbency. Is studying *Chemistry* at the University of Leipzig.

Raymond Leslie Weeks, A.B. 1890, A.M. 1891. Res. Gr. Stud., 1890–91. Instructor in Romance Languages, 1891–93, University of Michigan. II. year of incumbency. In 1893–94, pursued the study of *Romance Philology* at Paris. Now continuing it at the same place.

Arthur Wisswald Weysse, A.B. 1891, A.M. 1892, PH.D. (Zoölogy) 1894. Res. Gr. Stud., 1891–94. I. year of incumbency. Is studying *Zoölogy* at the University of Leipzig.

The John Thornton Kirkland Fellowship.

Hugh Tallant, A.B. 1891, A.M. 1891. III. year of incumbency. In 1892–93 and 1893–94, pursued the study of *Architectural Design* at the École des Beaux Arts at Paris. Now continuing it at the same place.

The James Walker Fellowship.

Charles Montague Bakewell, A.B. (*Univ. of California*) 1889, A.M. (*Ibid.*) 1891, A.M. (*Harvard Univ.*) 1892, PH.D. (Philosophy) 1894. Res. Gr. Stud., 1891-92, 1893-94. Non-Res. Gr. Stud., 1892-93. I. year of incumbency. Is studying *Philosophy* at the University of Berlin.

The Morgan Fellowships.

Edward Angus Burt, A.B. 1893, A.M. 1894. Professor of Natural Science, 1885-90, New York State Normal College, Albany, N.Y. Res. Gr. Stud., 1893-94. I. year of incumbency. Studying *Botany* at this University.

Samuel Bannister Harding, A.B. (*Indiana Univ.*) 1890, A.M. (*Harvard Univ.*) 1894. Instructor, 1891-93, Workingman's School, New York, N.Y. Res. Gr. Stud., 1893-94. I. year of incumbency. Studying *History and Economics* at this University.

Robert MacDougall, A.B. (*McGill Univ. P. Q.*) 1890, A.M. (*Harvard Univ.*) 1893. Res. Gr. Stud., 1892-94. I. year of incumbency. Studying *Philosophy* at this University.

William Henry Schofield, A.B. (*Victoria Univ., Ont.*) 1889, A.M. (*Harvard Univ.*) 1893. Past Instructor, Hamilton College Institute, Ont. Res. Gr. Stud., 1892-94. II. year of incumbency. Studying *English and Germanic Philology* at this University.

The John Tyndall Scholarship.

Charles Edward St. John, S.B. (*Michigan Agric. Coll.*) 1887, A.M. (*Harvard Univ.*) 1893. Assistant in Physics, 1886-92, Michigan State Normal School. Res. Gr. Stud., 1892-94. II. year of incumbency. In 1893-94, pursued the study of *Physics* at this University. Now continuing it at the University of Berlin.

The Robert Treat Paine Fellowship.

Carlos Carleton Closson, Jr., A.B. 1892, A.M. 1893. Res. Gr. Stud., 1892-94. II. year of incumbency. In 1893-94, pursued the study of *Economics and Sociology* at this University. Now continuing it at Rennes, France.

The Henry Lee Memorial Fellowship.

Guy Stevens Callender, A.B. (*Oberlin Coll., O.*) 1891, A.B. (*Harvard Univ.*) 1893, A.M. (*Ibid.*) 1894. Res. Gr. Stud., 1892-94. I. year of incumbency. Studying *History and Economics* at this University.

The Ozias Goodwin Memorial Fellowihip.

Amos Shartle Hershey, A.B. 1892, PH.D. (*Univ. of Heidelberg, Germany*) 1894. I. year of incumbency. Studying *Constitutional and International Law* at Paris.

The Henry Bromfield Rogers Memorial Fellowship.

Abram Piatt Andrew, Jr., A.B. (*Coll. of New Jersey*) 1893. Res. Gr. Stud., 1893-94. I. year of incumbency. Studying *Sociology* at this University.

The *Morgan Fellowships* were established by the Corporation, in the year 1884, from the income of the bequest of Henry T. Morgan, Esq., of New York; that gift having been made to the University without restriction as to purpose. The Corporation at first established four of these fellowships, with an annual income of $500 each. Two additional fellowships, having an income of $500 each, were established in 1887; and in 1892 two more, having an income of $400 each. There were, therefore, in 1892–93, eight of these fellowships, having an aggregate income of $3800.

At the beginning of the year 1893–94, in consequence of the severe financial pressure then affecting the resources of the University, the Corporation communicated to the Faculty of Arts and Sciences their intention of reducing the appropriation for the Morgan Fellowships. The Administrative Board of the Graduate School felt it to be their duty to present an earnest remonstrance against this step. The Corporation were unable to yield to the remonstrance of the Administrative Board; but they expressed their willingness to accept the views of the Board with respect to the precise form of the reduction. The Morgan Fellowships were accordingly made, for the present, four in number, with an annual income of $500 each. Thus the original foundation, made in 1884, has been, for the time being, reëstablished. Two of the eight persons appointed for 1893–94 having resigned, in consequence of receiving professional appointments at other Universities, their places were left vacant. There were, therefore, six holders of these fellowships in the year 1893–94; while only four were appointed for the year 1894–95.

I most earnestly hope that the reduction of these fellowships is only temporary; and that the full income of the Morgan fund may be applied to the support of the Morgan Fellowships, as soon as the financial condition of the University shall permit. These fellowships exist for the purpose of aiding men, well past their majority, who have, in many cases, taken up the work of life as professors in colleges or teachers in important schools, to fulfil the laudable ambition of making themselves more useful in their career, and of qualifying themselves to take part in scientific and literary research, such as may advance the boundaries of knowledge. Pecuniary help is absolutely necessary, if they are to carry out their high purpose; nor will a mere pittance, such as might enable a poor boy to struggle through college, half-fed and harassed by care, be enough for men in their situation. If it is worth while for a man to go on into higher studies at all, he must be, in a measure, free from anxiety about the means of living, for himself and those dependent on him, in order that he may be fit to do the kind of work he has undertaken. He must have some moderate approach to an equivalent for the salary he relinquishes at home. It is idle to apprehend that a man who is earning a salary of a thousand dollars or more in the work of his profession will be unduly tempted by the offer of five hundred to give up that work for a year, and become the pensioner of a university. He seeks the fellowship, not as a pecuniary benefit, but because he is ambitious of the noble opportunity of study, which he can enjoy in no other way, and which, even in that way, he can enjoy only by virtue of sacrifices for himself and his family. It is most important for the development of higher learning in our country that capable and ardent young men be enabled to pursue studies at a graduate school. Other universities offer them generous means of doing this. It will be a matter of lasting regret, if Harvard neglects to provide fittingly for such students, and fails to secure her share in what must be regarded as the best university work of our day.

At the close of the academic year 1893–94, the Faculty of Arts and Sciences, acting in pursuance of an expression of opinion by the Board of Overseers, recommended to the Corporation the opening of a large number of courses, among those designed primarily for graduates, to properly qualified *students of Radcliffe College;* and this recommendation was at once adopted by the Corporation. The step thus taken must be regarded as of high importance, not only in its bearing on the cause of the education of women, but also in its tendency to strengthen the position of the Graduate School. It seems well in accordance with the constitution and the special position of our eastern universities, that a distinction be made, in regard to the question of the coeducation of the sexes, between graduate and undergraduate work. We may confidently hope, therefore, that the present experiment will prove to be a successful one. It cannot, however, but suggest the question whether a similar distinction ought not to be made between the higher and lower degrees, — between the degree of A.B., taken in course at the close of the work of an undergraduate student, and the special degree of Ph.D. The degree of A.B. rests, and must continue to rest, largely upon mere records, referring to matters of detail; and it falls, therefore, primarily within the province of an administrative body, familiar with the academic history of each candidate. The doctorate, on the other hand, is free from routine considerations, and owes its whole significance to the reputation and authority of the faculty from which it proceeds. Should it not then be given in the name of that faculty? And does not the Radcliffe degree of A.B. justly entitle its holder to admission to candidacy for the Harvard Ph.D., on the same footing as that on which the holder of the Harvard A.B. is admitted? These are questions which demand careful consideration in all their relations.

The year 1893–94 was memorable as the twenty-fifth year of your administration as President of Harvard University. I cannot pass by this occasion of bearing my testimony to the early and unvarying interest you have manifested in the development of what is now the Graduate School. One of the very first movements which signalized your accession to office was the organization, at your instance, for the year 1869–70, of two systematic courses of advanced instruction, one in Philosophy and one in Modern Literature, given by specially appointed lecturers, and open "to graduates, teachers, and other competent persons (men and women)." It was announced, within the first eight months of your administration, that the degree of Master of Arts would, after 1872, be given only on examination. In January, 1872, the degrees of Doctor of Philosophy and Doctor of Science were established; and rules regulating the conditions of those degrees and of the degree of Master of Arts were promulgated. The Academic Council was revived, and charged with the administration of these rules; and, at the beginning of the year 1872–73, the Graduate Department came into existence.

All these important steps were directly due, in large measure, to your vigorous activity. They marked, from the first, the development of graduate study as one of the leading features of the policy you wished to establish for the University; and the prosperity which the Graduate School has at last with much difficulty attained, by the aid of your constant support, cannot be the least among your many causes of satisfaction at the present time.

In closing my report, I beg to express my obligations to Professor W. G. Farlow, who held the office of Acting Dean of the Graduate School during the early weeks of the year 1894–95, when I was detained abroad by illness. I am greatly indebted to him for his care of the administrative business of the School during this period, and for valuable assistance in preparing the present report.

JAMES MILLS PEIRCE, *Dean*.

DECEMBER, 1894.

THE DIVINITY SCHOOL.

To the President of the University:

I beg to present the following report of the Divinity School for the academic year 1893–94: —

The number of students who registered in the School was fifty-one. They were distributed as follows: —

Resident Graduates	12
Senior Class	4
Middle Class	8
Junior Class	19
Special Students	8

Of these, six left in January or earlier, and four entered the School in January or later. Thus the number of students taking a full year's course was forty-one. Those who left during the year did so, for the most part, in order to engage in the work of the ministry. Three were graduates of some Theological Seminary; while some of the others, possibly all, had been preachers before joining the School. This is the largest number of students that has ever been present in the School. The increase is found in the Junior Class and is produced by the unusually large number of Harvard Graduates in the Junior Class, there being twelve of these. Most of them entered not as is often done, to take the degree of A.M. or a year's study of theology, but with the intention of remaining and graduating.

Among the Graduates were representatives of eleven Theological Seminaries, as follows: —

Boston	2
Doshisha (Japan)	1
Drew	1
Harvard	1
Manchester New College (England)	1
McCormick	1
Meadville	2
College of New Jersey	1
Rochester	1
Union	1
Yale	1

Twenty-one Colleges and Universities, other than Theological Seminaries, were represented in the School, namely: —

Allegheny	1
Bowdoin	2
Brown	2
City of New York	2
Colby	3
DePauw	1
Doshisha (Japan)	1
Durham	1
Eureka	1
Harvard	23
University of Indiana	1
University of Iowa	1
Knox	1
McGill	1
Mount Union	1
Park	1
College of New Jersey	1
North Western	1
Ohio State	1
University of Penn.	1
Ohio Wesleyan	1

Students were present from eleven states of the Union, and from the District of Columbia, as follows: —

Colorado	1	New Hampshire	4
Illinois	4	New York	4
Iowa	1	Ohio	5
Indiana	1	Pennsylvania	4
Maine	3	Wisconsin	1
Maryland	1	District of Columbia	1
Massachusetts	15		

Students were also present from

England	1	The Caucasus	1
The British Provinces	1	Japan	2

Divinity Chapel and the entries of Divinity Hall were warmed last year, for the first time, by steam drawn from the heating apparatus of the Library. The hall is now a thoroughly comfortable building; The erection of College dormitories in the neighborhood takes away its appearance of isolation. Special measures have been adopted to induce Divinity students to occupy it, by not renting rooms before the opening of the term to other occupants, and by admitting on occupants whose presence for any reason might not be desirable. The Faculty would gladly see all the rooms occupied by Divinity students, and so far as possible all Divinity students gathered under one roof. It is to be regretted that in spite of the arrangements referred to, only twenty-two rooms were occupied by Divinity students, against fifteen which were so occupied the year before; while no student desiring a room in the hall was unable to obtain one. The fact that rooms outside could be had more cheaply, especially when the cost and trouble of furnishing it are considered, had much to do with this result. It is hoped that as experience shows the advantages of a greater centralization of the life of the School, more students will desire to secure the benefits of this.

In the absence of the Dean the duties of his office were performed by Professor Peabody.

The care of a part of the official correspondence of the School had the year before been put into the hands of the Librarian, Robert S. Morison, B.D. Last year he was formally appointed Secretary of the Faculty. This appointment gives welcome relief to the Dean, and also introduces greater system into the official business of the School. The necessity of this differentiation of official duties is also a pleasant sign of the growth of the institution. It should be mentioned that a part of the business now put into the hands of the Secretary had been unofficially performed by Professor Emerton.

In the absence of the Bussey Professor of Theology, Professor John Edward Russell, formerly holding a Professorship in Yale Theological Seminary and now holding a similar position in Williams College, was invited to give two lectures a week on subjects connected with theological study; and also to assist Resident Graduates who might wish to pursue independent study in Theology. For these purposes he passed one day each week at Cambridge. The students taking his courses were extremely interested in them.

Professor Lanman kindly consented to allow students desiring to study the religions of India to consult with him.

Professor Emerton delivered the customary lecture to the whole School at the opening of the year. His subject was: "The Importance of Historical Study for the student of Theology."

Short courses were given during the year, as follows: —

Washington Gladden, D.D., three lectures on "Minister and People."

J. H. Vincent, D.D., six lectures on "The Work of the Christian Minister."

Hon. George S. Hale, five lectures on "The Legal Aspects of the Ministry."

E. E. Hale, D.D., on "The Principles of Congregationalism."

These lectures were found interesting and profitable. It is well that the students should be thus brought into relation with prominent men from different parts of the country, representing various forms of theological belief or church organization, and those of them who are in the ministry coming from the midst of successful labor in the calling to which the students are looking forward.

The relation of the School to the College, which has been often referred to in these reports, suggests many interesting questions which only the future can solve, and which we may hope it will solve wisely. The connection between the two is continually growing closer to the advantage in many ways of both. The instruction in the College that Divinity students are able to take, supplements very helpfully the courses of the School; while the instruction of the School, nearly all of which is accepted for the degree of A.B., enlarges considerably the teaching of the College. In regard to the use of College teaching by Divinity students, it may be remarked that Special Students are obliged to pay an additional fee for such teaching; Graduate Students are required to do the greater part of their work in connection with the School, while candidates for the degree of B.D. have comparatively little time for outside work. In spite of these limitations thirty-eight elections of courses and half-courses in College were made by twenty-six Divinity students at the beginning of the year, namely: —

	Students.	Courses.	Hf. Courses.
Resident Graduates	6	8	1
Senior Class	0	0	0
Middle Class	6	5	2
Junior Class	12	14	5
Special Students	2	3	0
	26	30	8

No student elected more than two courses. Seventeen of these elections were for courses in Philosophy and five for courses in Political Economy and Economics. Others were for courses in Comparative Literature, English, Italian, French, Greek, Sanskrit, Botany, and Zoölogy. In point of fact not more than thirty courses and half-courses were followed during the whole year. This may have been because some who had entered upon them left the School; but unquestionably the chief reason was that the interest and pressure of the work of the School crowded out whatever was not included in that. In this aspect of the case, it is interesting to notice that while twelve Juniors elected fourteen courses and five half-courses in the College, the Seniors elected none. They had, perhaps, learned from experience the limits within which their work must practically be confined. It would, of course, be greatly to the advantage of students if more use were made of the privileges thus offered to them, just as it would be for the advantage of the College student if he could take more of the courses that are so tempting to him. It is also obvious, however, that the School must offer a full year's work of its own; and three years are only too few in which to complete the preparation for a professional life.

The number of College students taking courses that were originally confined to the Divinity School and that are still accepted for the degree of B.D. was 375.

Tables are added representing the courses of instruction given and the attendance upon them. In these only the number of students taking examination is given. In several cases there were regular attendants who did not take the examinations. Professors Toy and Lyon gave also courses designed especially for College students and taken only by them. Such courses are not included in this table.

COURSES OF INSTRUCTION, 1893–94.

OLD TESTAMENT.

Professor Lyon and Mr. Chester. — Hebrew. — Davidson's Introductory Hebrew Grammar. — Explanation of parts of Genesis and of the Psalm-book. 3 hours. 10 Div., 4 Col.

Professor Toy. — Hebrew (Second Course). — Syntax. — Interpretation of parts of the Prophets and the Poetical Books. 2 hours. 2 Col.

Professor Lyon. — History of Israel, political and social, from Saul to Herod the Great. 2 hours. 12 Div., 131 Col.

Professor Toy. — History of pre-Christian Hebrew Literature. 2 hours. 7 Div., 8 Col.

Professor Toy. — History of the Hebrew Religion, with comparison of other Semitic Religions. 2 hours. 6 Div., 2 Col.

Professor Lyon. — Assyrian (Second Course). — Delitzsch's Assyrian Grammar. — The Cuneiform Inscriptions of Western Asia (interpretations of selections). 2 hours. 1 Div., 3 Col.

Professors Toy and Lyon. — Research-course. 1 hour. 2 Div.

NEW TESTAMENT.

Professor Thayer. — New Testament Times: — the political, social, moral, and religious condition of the world when Christ appeared. 1 hour. 15 Div.

Professor Thayer. — Outline Lectures on Theological Encyclopaedia and Literature; the Characteristics of the New Testament Greek; the Septuagint; Textual Criticism; the Life of Christ; Study of the Gospels; Essays and Criticism. 2 hours. 8 Div., 1 Col.

Professor Thayer. — New Testament Introduction: — the Origin, Contents, and History of the New Testament Writings, together with the Formation of the Canon. 1 hour. 15 Div.

Professor Thayer. — Outline Lectures on the Life of Paul; Study of the Epistles; Essays and Criticisms. 2 hours. 6 Div.

Professor Thayer. — Advanced Study and Research: — on such topics as the antecedents and aims of individual students may render advisable. 1 hour. 1 Div.

CHURCH HISTORY.

Professor Emerton. — The First Eight Christian Centuries. — The Conflict of Christianity and Paganism. — Origin and Development of the Roman Papacy to its alliance with the Frankish State. — The Germanic Races as the Basis of a new Christian Civilisation. 2 hours. 11 Div., 33 Col.

Professor Emerton. — The Middle Ages from Charlemagne to Dante. — Foundation of the European States. — The Holy Roman Empire. — The Roman Papacy as the controlling force in European Life. 1½ hours. 11 Div., 80 Col.

Professor Emerton. — History of Christian Doctrines. 2 hours. 8 Div.

Professor Emerton. — Advanced Study and Research in connection with the Seminary in Mediaeval History. Special topic: Relations of Church and State. 2 hours. 2 Col.

THEOLOGY.

Professor Peabody. — The Philosophy of Religion. — An Introduction to the study of Theology. 1 hour. 18 Div., 10 Col.

Dr. Russell. — The Ground and Content of Christian Faith. 1 hour. 13 Div.

Dr. Russell. — The Historical Source and Basis of Christian Theology. 1 hour. 15 Div.

ETHICS.

Professor Peabody. — The Ethics of the Social Questions. — The Questions of Charity, Divorce, the Indians, Temperance, and the various aspects of the Labor Question (Socialism, Communism, Arbitration, Coöperation, etc.), as problems of practical Ethics. Lectures, essays, and practical observations. 2 hours. 17 Div., 99 Col.

HOMILETICS.

Mr. Hale. — The Structure and Analysis of Sermons. — Private criticism, and general exercise. 14 Div.

Professor Peabody. — Each student writes six sermons during the year, three of which are preached before the two upper classes and criticised by students and Instructor; the rest are criticised privately, both as to composition and delivery, and are preached at a weekly religious exercise of the School which is open to the public. 15 Div.

ELOCUTION.

Mr. Churchill was at the School for six hours one day in the week. He met some of the students individually or in small groups, and held a general exercise in Vocal Culture lasting one hour. 28 Div.

GENERAL EXERCISES.

Preaching by students in the Chapel of the School, open to the public. Once a week.

Meetings for Religious Conference, conducted by students. Once in two weeks.

The following tabular statement shows the changes in the Library for the year ending September 30, 1894: —

	Vo	Pam.
In Library, Oct. 1, 1893	24,593	4,525
Added by purchase, Oct. 1, 1893, to Sept. 30, 1894	324	5
Added by gift, Oct. 1, 1893, to Sept. 30, 1894	1,221	676
	26,138	5,206
Less duplicates sold	123	11
	26,015	5,195
Dcrease by binding	2	33
In Library, Oct. 1, 1894	26,013	5,162

During the year there were 1925 titles catalogued in the author catalogue, and 905 in the subject catalogue. From Oct. 1, 1893, to

Sept. 30, 1894, there were borrowed from the stacks for home use 1136 volumes, and for hall use 383 volumes; and from the reserved books for over-night use 755 volumes. The corresponding figures for the preceding year were 1083 for home use, 221 for hall use and 594 for over-night use. The Librarian reports that in recent years there has been a constant increase in the use of the Library in the ways indicated, an increase greater than could be accounted for by the growth of the school. The most important use of the Library is that of the Reference Room. Of this no definite report can be given. This room is open from nine o'clock in the morning till ten in the evening and is largely used.

The increase in the use of the Library delays somewhat the progress in the work of cataloguing by the interruptions that such use occasions; while the generous gifts of books the last year prolongs the work of cataloguing the Library in general. The most important gifts of this kind were 768 volumes from the library of Dr. A. P. Peabody and 231 volumes from that of Rev. Samuel Longfellow. In both cases the Librarian was allowed to select those books that would be most desirable for the purposes of the school. I am glad to express the gratitude of the school for these gifts of books valuable in themselves, and valuable also from their association with their former owners.

The thanks of the school are also due to Mrs. Rushton T. Burr for the gift of $1000.97, in memory of her husband, the income to be used in the purchase of books. This is the first fund that the school has received for the benefit of the Library, though the legacy of Mrs. Hall is at present set apart for that purpose.

A gift of $1300.00 was received from the Society for Promoting Theological Education, of which $622.77 were spent in the purchase of books, and the balance, amounting to $677.23, was spent for services in connection with the library. A second gift of $1300.00 from the same source was received just at the close of the financial year. A detailed account of the benefactions which the School has received from this society since its origin would be extremely interesting. I am glad to express once more the thanks of the School to this organization that has so often contributed to its needs.

C. C. EVERETT, *Dean.*

THE LAW SCHOOL.

To the President of the University:

Sir, — I beg to submit the following report upon the Law School for the academic year 1893–94: —

The table on pp. 122, 123 gives the courses of study and instruction during the year, the names of the instructors, the text-books used, the number of exercises per week in each course, and the number of students who offered themselves for examination in each course at the end of the year.

The following table exhibits the attendance at the School during the last twenty-four years: —

Year.	Whole no. of students.	No. present during the whole year.	No. present only part of the year.	Average number.
1870–71	165	107	58	136
1871–72	138	107	31	123
1872–73	117	109	8	113
1873–74	141	121	20	131
1874–75	144	130	14	137
1875–76	173	153	20	163
1876–77	199	168	31	184
1877–78	196	172	24	183
1878–79	169	137	32	154
1879–80	177	138	39	157
1880–81	161	136	25	149
1881–82	161	139	22	146
1882–83	138	120	18	129
1883–84	150	130	20	140
1884–85	156	139	17	148
1885–86	158	142	16	151
1886–87	188	160	28	174
1887–88	225	197	28	211
1888–89	225	198	27	212
1889–90	262	229	33	245
1890–91	285	255	30	272
1891–92	370	337	33	354
1892–93	405	369	36	388
1893–94	367	329	38	349

Instructors.	Studies and Text-books.	Exercises per week.	No. of students examined.
	First Year.		
Prof. Wambaugh and Prof. Williston	Contracts. Langdell's Cases on Contracts	3	166
Prof. Gray	Property. Gray's Cases on Property, vol. 1, 2	2	161
Prof. Smith	Torts. Cases on Torts: Ames, vol. 1, 2d ed., Smith, vol. 2	2	171
Prof. Williston	Civil Procedure at Common Law. Ames's Cases on Pleading	1	154
Prof. Beale	Criminal Law and Procedure. Beale's Cases on Criminal Law	2	169
	Second Year.		
Prof. Wambaugh	Agency. No text-book	2	52
Prof. Williston	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	52
Prof. Beale	Carriers. McClain's Cases on Carriers	2	46
Prof. Ames	Contracts. Keener's Cases on Quasi-Contracts	2	56
Prof. Thayer	Evidence. Thayer's Cases on Evidence	2	118
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	16
Prof. Gray	Property. Gray's Cases on Property, vol. 3, 4	2	128
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	62
Prof. Ames	Trusts. Ames's Cases on Trusts (new edition)	2	112
Prof. Beale	Damages. No text-book	1	2
Prof. Wambaugh	Insurance. No text-book	1	2

Third Year.

Prof. Thayer	Constitutional Law. No text-book	2	42
Prof. Smith	Corporations. Cumming's Cases on Corporations	2	35
Prof. Langdell	Jurisdiction and Procedure in Equity. No text-book	2	42
Prof. Ames	Partnership. Ames's Cases on Partnership	2	43
Prof. Gray	Property. Gray's Cases on Property, vol. 5, 6	2	26
Prof. Langdell	Suretyship and Mortgage. No text-book	2	9
Prof. Wambaugh	Agency. No text-book	2	13
Prof. Williston	Bills of Exchange and Promissory Notes. Ames's Cases on Bills and Notes	2	39
Prof. Beale	Carriers. McClain's Cases on Carriers	2	32
Prof. Ames	Contracts. Keener's Cases on Quasi-Contracts	2	16
Prof. Thayer	Evidence. Thayer's Cases on Evidence	2	7
Prof. Langdell	Jurisdiction and Procedure in Equity. Langdell's Cases in Equity Pleading	2	8
Prof. Gray	Property II. Gray's Cases on Property, vol. 3, 4	2	3
Prof. Thayer	Sales of Personal Property. Langdell's Cases on Sales	2	21
Prof. Ames	Trusts. Ames's Cases on Trusts (new edition)	2	5
Prof. Beale	Conflict of Laws. No text-book	1	3
Prof. Beale	Damages. No text-book	1	7
Prof. Wambaugh	Insurance. No text-book	1	8

The following table exhibits the School as divided into classes since the establishment of the three-years' course and the examination for admission: —

Year.	1877–78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
First	72	63	78	57	61	59	58	75	55	75	89	74	90	106	143	140	149
Second	79	50	32	58	41	38	40	37	46	47	55	66	59	73	112	119	123
Third	.	.	21	14	25	20	22	17	17	24	33	27	52	45	48	70	72
Special Students	31	47	46	32	34	21	30	28	40	42	46	58	62	61	67	76	23

In regard to the last table, it is to be observed that, although the three-years' course went into operation at the beginning of 1877–78, there was no third-year class until 1879–80. It is also to be observed that the second-year class of 1877–78 did not take the three-years' course, but was graduated at the end of the second year, that class having entered the School before the three-years' course went into operation.

The following table exhibits the results of the examinations for a degree in each year since the establishment of the three-years' course: —

Year.	First year.			Second year.			Third year.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
1877–78	66	51	15	66	47	19	.	.	.
1878–79	50	42	8	40	39	1	.	.	.
1879–80	73	69	4	28	26	2	22	18	4
1880–81	45	43	2	49	46	3	18	18	0
1881–82	49	44	5	38	37	1	36	33	3
1882–83	46	44	2	36	34	2	21	19	2
1883–84	51	41	10	35	31	4	26	25	1
1884–85	61	56	5	30	29	1	23	19	4
1885–86	54	48	6	41	38	3	18	18	0
1886–87	66	59	7	40	38	2	26	26	0
1887–88	80	70	10	43	34	9	33	32	1
1888–89	72	66	6	58	55	3	30	29	1
1889–90	86	75	11	52	49	3	51	47	4
1890–91	107	102	5	62	54	8	47	46	1
1891–92	134	130	4	100	91	9	62	55	7
1892–93	139	129	10	113	101	12	71	67	4
1893–94	165	151	14	110	108	2	86	80	6

In regard to the foregoing table it is to be observed that it includes no special students, and hence that all the applicants included in it were either graduates of colleges or had passed the examination for admission. Of course this remark does not apply to the second-year class of 1877–78, and this accounts in part for the much greater number of failures in that class.

The following table exhibits the results of the examinations for admission in each year since they were established: —

	1877-78.	1878–79.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
Offered	16	15	18	25	19	12	12	17	17	14	33	15	20	28	38	64	36
Admitted	7	7	12	13	16	10	5	11	7	6	17	11	10	11	18	36	22

The following table exhibits the number of students who have received the honor degree in each year since it was established: —

1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.
7	3	10	10	5	5	7

1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
9	9	12	14	17	11	19	22

The following table exhibits the number of students who, since the establishment of the three-years' course, have been examined for a degree in the studies of any year without having been members of the School during that year: —

Year.	First year.			Second year.			Third year.		
	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.	Offered.	Passed.	Failed.
1877–78	5	2	3	.	.	.	.	.	.
1878–79	3	2	1	.	.	.	.	.	.
1879–80	6	4	2	1	1	0	5	4	1
1880–81	6	4	2	.	.	.	4	4	0
1881–82	2	1	1	.	.	.	10	8	2
1882–83	3	3	0	.	.	.	3	2	1
1883–84	7	6	1	.	.	.	3	3	0
1884–85	3	2	1	.	.	.	6	4	2
1885–86	4	3	1	.	.	.	2	2	0
1886–87	3	3	0	.	.	.	4	4	0
1887–88	5	3	2	1	0	1	2	2	0
1888–89	12	8	4	.	.	.	3	3	0
1889–90	7	6	1	.	.	.	.	.	.
1890–91	11	9	2	1	0	1	1	1	0
1891–92	13	11	2	.	.	.	3	3	0
1892–93	15	9	6	2	1	1	3	2	1
1893–94	30	21	9	1	0	1	14	12	2

The following table exhibits the number of students who have entered the School in each year during the last twenty-five years, and shows how many of them were graduates of colleges; and of the latter, how many were graduates of Harvard and how many of other colleges: —

Year.	Whole number of entries.	Graduates of colleges.	Harvard graduates.	Graduates of other colleges.	Non-graduates.
1870–71	105	60	19	41	45
1871–72	92	56	26	30	36
1872–73	87	47	22	25	40
1873–74	95	58	29	29	37
1874–75	102	55	40	15	47
1875–76	119	67	39	28	52
1876–77	128	77	47	30	51
1877–78	111	79	47	32	32
1878–79	102	62	38	24	40
1879–80	124	76	59	17	48
1880–81	91	60	41	19	31
1881–82	97	53	29	24	44
1882–83	84	56	33	23	28
1883–84	86	61	47	14	25
1884–85	101	79	56	23	22
1885–86	88	60	35	25	28
1886–87	113	80	46	34	33
1887–88	134	82	52	30	52
1888–89	111	77	50	27	34
1889–90	153	102	66	35	52
1890–91	160	107	65	42	53
1891–92	211	132	59	73	79
1892–93	223	128	58	70	95
1893–94	194	149	58	91	45
1894–95	214	147	64	83	67

The following table exhibits the number of students, who in each of the last ten years have failed to pass a satisfactory examination in at least three subjects, and also the number of the latter who returned to the School the following year: —

Year.	First year.		Second year.		Third year.		Specials.	
	Failed.	Returned.	Failed.	Returned.	Failed.	Returned.	Failed.	Returned.
1884-85	15	7	6	2	0	0	18	6
1885–86	9	5	4	0	1	0	28	5
1886–87	18	7	6	1	1	0	17	4
1887–88	19	9	18	9	0	0	19	9
1888–89	11	2	10	5	1	0	29	16
1889–90	15	8	5	2	0	0	30	14
1890-91	13	7	13	5	1	0	20	1
1891–92	19	1	16	6	0	0	23	3
1892–93	17	0	13	4	3	0	30	2
1893–94	7	2	10	1	1	0	5	0

The foregoing table is not confined to those who tried and failed but includes all those who, for whatever reason, did not pass a satisfactory examination in at least three subjects. On the other hand, none of those who were in the School only a part of any year are included in the number for that year. (For remarks upon this table, see *infra*, p. 132.)

The following table exhibits the average age at which students have entered the School in each year since 1873–74, that being the first year in which a record of ages was kept; also the age at which Harvard graduates, graduates of other colleges, and non-graduates respectively, have entered the School in each year since 1873–74; also the average age at which students have entered the School during the whole period since 1873–74; also the average age at which Harvard graduates, graduates of other colleges, and non-graduates respectively, have entered the School during the whole period since 1873–74: —

Year.	Of whole number of entries.	Of Harvard graduates.	Of graduates of other colleges.	Of non-graduates.
1873–74	23.34	23.58	23.76	22.83
1874–75	22.71	23.66	22.78	21.88
1875–76	22.98	22.35	23.28	23.28
1876–77	22.33	22.83	22.49	21.76
1877–78	23.34	23.25	23.83	22.97
1878–79	22.56	23.14	22.88	21.81
1879–80	23.20	23.46	22.77	23.02
1880–81	22.36	22.66	23.11	21.50
1881–82	22.68	23.06	23.73	21.85
1882–83	22.73	22.94	23.12	22.13
1883–84	22.64	23.17	22.86	21.53
1884–85	22.68	23.33	22.10	21.65
1885–86	22.73	23.21	22.84	22.03
1886–87	22.90	23.31	24.00	21.50
1887–88	22.86	23.33	23.42	22.07
1888–89	23.07	23.26	23.84	22.23
1889–90	22.91	23.19	22.83	22.42
1890–91	23.29	23.57	23.20	23.03
1891–92	22.68	22.80	23.68	21.71
1892–93	23.07	23.56	23.56	22.42
1893–94	23.29	23.36	23.46	22.87
1873–74 to 1893–94	22.90	23.22	23.32	22.25

The table on pages 122, 123 differs from all the other tables in this report, in this, namely, that the statistics which it gives relate exclusively to the year under review. In order, therefore, to compare the latter year with any previous years in respect to the statistics exhibited in the table in question, it will be necessary to compare that table with the corresponding tables in the reports for the different years respectively with which the year under review is to be compared.

If we thus compare the table in question in the present report with the corresponding table in the reports for the years 1891–92 and 1892–93 respectively, and with the circular or annual catalogue for the current year, we shall find some things which require explanation, especially if we bear in mind the further facts that, at the beginning of 1892–93, the number of professors and assistant professors was increased by one-third, namely, from six to eight, and that there has been no increase in their number since that date; for it will appear that the amount of instruction given in 1892–93 was the same that was given in 1891–92, namely, forty hours per week, while the amount given in 1893–94 was increased to forty-three hours per week, and the amount given in the current year has been further increased to forty-eight hours per week. How did it happen that the increase in the number of professors and assistant professors, in the beginning of 1892–93, from six to eight, was followed by no apparent increase in the amount of instruction given during that year? There were two reasons for this, namely: first, that, in 1891–92, there was more instruction given than the six professors and assistant professors were able to give, these teachers giving only thirty-six hours of instruction (*i.e.*, six hours per week each), and hence the remaining four hours had to be otherwise provided for; secondly, during the year 1891–92 the Faculty decided that thereafter the first-year class should be divided, for the purposes of instruction, into two sections, the class being thought to have become too large to be taught conveniently without such division; and accordingly, at the beginning of 1892–93, the first-year class was divided into two sections in respect to four of the courses, amounting together to eight hours per week. Moreover, as the labor of giving these four courses was thus doubled, the effect of the change, so far as regarded the instructors, was to require eight hours per week more of instruction to be given. There were, therefore, in all twelve hours of instruction to be provided for (*i.e.*, full work for two instructors), besides what the six professors and assistant professors could give. Moreover, it was thought the time had come, when the School should cease to rely upon instructors temporarily appointed for any part of the regular instruction of the School, and accordingly the number of professors and assistant professors was increased from six to eight as already stated; and thus, in the year 1892–93, for the first time since 1885–86, all the regular instruction of the School was given by professors and assistant professors; and yet the amount of instruction had increased to forty-eight hours per week, in respect to the instructors, though it was still only forty hours in respect to the students.

After a year's experience of the division of the first-year class into sections, it was found not very satisfactory; and accordingly, in the year under review, two of the courses, in respect to which the class had been divided, and which amounted together to three hours per week, were given without any division of the class; and it thus became practicable to give three new courses of one hour per week each. At the beginning of the current year the division of the first-year class into sections was entirely abandoned; and hence five hours more of new instruction were added; namely, by adding three new courses, one of two hours per week and two of one hour per week each, and by extending one of the courses first given in the previous year from one hour per week to two hours per week.

At the beginning of the year under review, two changes went into effect, each of which was calculated to reduce the number of students entering the School. One of these changes consisted in requiring every non-graduate entering the School to pass the admission examination, whether a candidate for a degree or not, instead of limiting the requirement, as theretofore, to those who wished to enter as candidates for a degree. The other change consisted in adding another language to the requirements of the admission examination, only one language having theretofore been required, and also in making Latin indispensable, instead of permitting the student, as theretofore, to choose between Latin and some modern language.

The first of these changes did not, indeed, have the effect of abolishing special students; but it did have the effect of abolishing them as a class of students who were not permitted to enter as candidates for a degree. Henceforth, therefore, special students were to consist only of such small number of persons as should prefer to be special students rather than to be members of any class which they would be entitled to enter. Accordingly, the number of special students in the School has been reduced from seventy-six in 1892–93 to twenty-three in the year under review, and to thirteen in the current year. Moreover, sixteen of the twenty-three, and five of the thirteen, were in the School when the change went into effect, and therefore were not affected by it; and one more of the thirteen though not in the School when the change went into effect, yet was admitted without examination by virtue of his having been in the School prior to the time when the change went into effect. If, therefore, no one had been exempted from the operation of the new rule, since it went into effect, by reason of his having previously been a member of the School, there would have been only seven special students in the School in 1893–94, and seven in the current year.

The two changes just referred to had the effect of reducing the total number of students entering the School, during the year under review, below that of the preceding year by twenty-nine (223 — 194 = 29), the number of non-graduates by fifty (95 — 45 = 50), the total number of students in the School during the year by thirty-eight (405 — 367 = 38), and the average number by thirty-nine (388 — 349 = 39). That these changes were the sole cause of the reduction in numbers is shown by the fact that the number of college graduates entering the School during the year under review was greater by twenty-one than in the preceding year (149 — 128 = 21); in other words, that the reduction in the number of non-graduates entering the School was greater by twenty-one than the reduction in the total number (50 — 29 = 21). The same thing is also shown by the fact that each of the three regular classes was larger in the year under review than in the preceding year, namely, the first-year class by nine (149 — 140 = 9), the second-year class by four (123 — 119 = 4), and the third-year class by two (72 — 70 = 2). Moreover, the experience of the current year shows pretty clearly that the practical exclusion of special students is not destined to diminish the size of the School; for more students by four have entered the School during the current year than had entered it at the corresponding date in 1892–93 (214 — 210 = 4), more college graduates by twenty-five (147 — 122 = 25), more Harvard graduates by seven (64 — 57 = 7), and more graduates of other colleges by eighteen (83 — 65 = 18); and the number of non-graduates is less by twenty-one only (88 — 67 = 21). It must be admitted, however, that it is scarcely fair to compare the non-graduates who have entered the School during the current year with those who had entered it at the corresponding date in 1892–93. The comparison should rather be with the total number of non-graduates who entered the School during the year 1892–93, which was ninety-five; for, as non-graduates can now enter the School only upon examination, and as examinations are held only at the beginning and at the end of the academic year, it follows that no non-graduates can enter hereafter during the current academic year. It is also proper to state that the sixty-seven non-graduates shown by the table to have entered the School during the current year include five students who tried to pass the admission examination, but failed, and so could not enter. This inaccuracy arises from the fact that the table in question has always been constructed on the principle of including every student who has entered his name, with the other particulars required, in the book of entries; and this every student examined for admission has been required to do on presenting himself for examination. This inaccuracy, however, (which will not occur hereafter*), works no injustice as between the current year and the year 1892–93, as it happens that the number of students whose names are contained in the book of entries, and who yet are not regarded as having become actual members of the School, is no greater in the current year than in 1892–93.

The comparative size of the School in the years 1892–93, 1893–94, and 1894–95, as shown by the annual catalogue for those years respectively, will lead to the same conclusion as to the effect which the practical exclusion of special students is likely to have upon the size of the School; for the annual catalogue for 1894–95 contains more names by fifty-one than that for 1893–94 (404 — 353 = 51), and more by ten than that for 1892–93 (404 — 394 = 10).

While the recent growth of the School in numbers is very gratifying, yet the Faculty regards mere numbers as a secondary consideration. The quality, not the size, of the School, is what they are chiefly proud of. It has, indeed, been their constant aim to improve the quality of the School at the expense of its numbers; and it may be truly said that the recent growth of the School in numbers has been in spite of the constant efforts of the Faculty to reduce its numbers by increasing the standard of its requirements. That these efforts have not been without success, is shown by the fact that of the four hundred and four students now in the School, no less than three hundred and twelve have academic degrees of some kind; and it may be added that there are twelve more who have earned an academic degree, eleven of whom will regularly become Bachelors of Arts of Harvard College in June next.

The efforts which have been made to improve the quality of the School have been mainly in two directions, namely: first, that of making the possession of an academic degree, or the passing of an examination in academic studies, a condition either of becoming a candidate for a degree, or of entering the School at all; secondly, that of making the passing of an examination, each year, in at least three subjects, a condition of remaining in one's class, and of receiving a degree with one's class. There was, however, a class of students whom this latter requirement did not reach; for if a student chose to remain in the first year or to become a special student there was nothing to prevent his remaining in the School as long as he pleased without passing any examination or doing any work. With a view, therefore, of meeting such cases, the policy was begun, four years ago, of making the passing of an examination, each year, in at least three subjects, a condition of remaining in the School. This condition has been in operation as to special students since the beginning of the year 1890–91, as to first-year students, since the beginning of the year 1891–92, and as to the whole school, since the year 1892–93. At page 126, will be found a table showing how many special students and how many members of each of the three regular classes, in each of the last ten years, have failed to pass a satisfactory examination in three subjects, and how many of each have returned to the School the following year. The table shows that the immediate effect of making and enforcing this condition was to reduce appreciably the number of students in the School; but it also seems to show pretty clearly that the ultimate effect will be so to improve the tone of the School that few will fail to comply with the condition.

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* Prior to the year 1893–94, the only effect of a student's passing the admission examination was that he was enabled to enter the School as a candidate for a degree instead of entering as a special student. It was, therefore, always assumed that every student who presented himself for examination intended to enter the School, whether he succeeded in passing the examination or not; and such was generally the fact. And hence the practice of requiring every one who presented himself for examination to enter his name in the book of entries. Now, however, there seems to be a clear incongruity in this practice, as the object of the examination is to ascertain whether the student is entitled to enter the School; and it is therefore proposed in future not to permit the student to enter his name in the book of entries until it is ascertained that he has succeeded in passing the examination.

Of the one hundred and ninety-four students shown by the book of entries to have entered the School during the year under review, one hundred and forty-seven entered the first-year class, fifteen entered the second-year class, nine entered the third-year class, seven became special students, and sixteen withdrew. The one hundred and forty-seven comprised the entire first-year class, with the exception of two who entered during the preceding year. Of the fifteen who entered the second-year class, six had previously been members of the School, and as such had acquired the right to enter the second-year class, but, having been out of the School one-third of a year or more, were required to re-enter as new members. The nine who entered the third-year class had all previously been members of the School, and as such had acquired the right to enter the third-year class, but, having been out of the School one-third of a year or more, were required to re-enter as new members. The number that withdrew without paying any tuition-fee, and consequently without acquiring a right to have their names appear in the annual catalogue (sixteen) was unusually large, but it was entirely accidental. The three regular classes were severally the largest in the history of the School prior to the current year.

Of the two hundred and fourteen students shown by the book of entries to have already entered the School during the current year, one hundred and seventy-one have entered the first-year class, twenty-two have entered the second-year class, two have entered the third-year class, seven are special students, and twelve have withdrawn. The one hundred and seventy-one now constitute, with the addition of two who entered the School in 1893–94, the entire first-year class; and they make it larger by thirty-two than the first year class of 1893–94, at the corresponding date (173 — 141 = 32), larger by thirty-eight than that of 1892–93 (173 — 135 = 38), and larger by thirty-one than that of 1891–92 (173 — 142 = 31). Of the twenty-two who have entered the second-year class, twelve were members of the Harvard College class of 1894 who had nearly earned their degree of Bachelor of Arts at the end of their junior year, and who consequently during their senior year, namely, 1893–94, did most of their work in the Law School; but, not having been able to obtain leave of absence from the College, they were unable to become members of the Law School until the beginning of the current year. The second-year class is larger by thirteen than the second-year class of 1893–94 (136 — 123 = 13), larger by seventeen than the second-year class of 1892–93 (136 — 119 = 17), and larger by twenty-four than the second-year class of 1891–92 (136 — 112 = 24). The third-year class is larger by sixteen than the third-year class of 1893–94, at the corresponding date (82 — 66 = 16), larger by thirteen than that of 1892–93 (82 — 69 = 13), and larger by thirty-four than that of 1891–92 (82 — 48 = 34).

The third-year class for the year under review would have been disappointing, but for the accessions which it received subsequently to the date of the annual report and of the publication of the annual catalogue; and, even as it was, it was larger by two only than the third-year class for 1892–93, though it had a second-year class larger by seven to draw from (119 — 112 = 7). The third-year class for the current year, on the other hand, is larger by sixteen than the third-year class for 1893–94 was at the corresponding date (82 — 66 = 16), though the second-year class from which it had to draw was larger by four only (123 — 119 = 4).

The number of graduates of colleges who have entered the School during the current year is greater by nine than the number which had entered at School at the corresponding date in 1893–94 (147 — 138 = 9), the number of Harvard graduates being greater by eleven (64 — 53 = 11), and the number of graduates of other colleges being less by two (85 — 83 = 2). Therefore, as the total number of new entries during the current year is greater by thirty-five than at the corresponding date in 1893–94, and as only nine of the thirty-five are college graduates, it follows that the remaining twenty-six are non-graduates. But it is to be borne in mind that fourteen of these twenty-six have already earned a college degree and are therefore graduates in everything but name. Perhaps surprise will be felt that, even including these latter, so large a number as sixty-seven non-graduates should be shown by the book of entries to have entered the School during the current year; and therefore it is proper to say that thirty-nine of the sixty-seven either passed the admission examinations, or had passed examinations in Harvard College which were deemed full equivalents for the admission examinations; four are graduates of law schools, and as such were entitled to be admitted without examination; four had been in the School previously, and for that reason were entitled to be admitted without examination; one was admitted without examination by a special vote of the Faculty, and five were obliged to withdraw, not having passed the admission examination (39 + 4 + 4 + 1 + 5 + 14 = 67).

During the year under review, the School met with an irreparable loss in the death of its assistant-librarian, George A. Arnold. He entered the service of the School in 1872, at the age of twenty-one, and remained in its service continuously until his death. During all that time he was distinguished for his faithfulness, his amiability, and his disinterested devotion to the interests of the School. Soon after his death the Corporation marked its sense of the value of his services by making a substantial provision for his family out of the surplus income of the School, and it gives me much satisfaction to add that this was done upon the unanimous recommendation of the Faculty.

C. C. LANGDELL, *Dean.*

DECEMBER, 1894.

THE MEDICAL SCHOOL.

To the President of the University:

Sir, — As Dean of the Medical Faculty I have the honor to submit the following report upon the Medical School for the academic year 1893–94: —

At the beginning of the year Dr. H. P. Bowditch, who had filled the office of Dean since June 2, 1883, resigned, and, at the meeting of the Faculty held November 4, the following resolution was unanimously adopted: "That the thanks of the Faculty be given to Dr. H. P. Bowditch for the faithful and efficient performance of the important duties of the office throughout his long term of service, and their congratulations upon the great success which the School has attained under his administration." The resignation of Dr. Bowditch was accepted by the Corporation to take effect December 1, at which time the new Dean entered upon his duties.

The new required four-years' course of instruction is working well. The last full class under the old system has been graduated. A few students remain in the School who can receive, if they so desire, the degree of a three-years' course.

A change has been made in the requirements for admission. On and after June, 1896, the entrance examinations will be (1) English Composition (subjects specified); (2) Latin; (3) Physics (either text-book examination or a satisfactory record of practical work done); (4) Chemistry (including Descriptive Chemistry and Qualitative Analysis); (5) French or German; (6) Algebra, Botany, or Plane Geometry.

With a view of affording an opportunity for mutual acquaintance and for discussing informally many questions which might suggest themselves as regards the methods of instruction and the management of the School work, the Faculty decided to give a reception to the Instructors of the School, the Committee to visit the School, the Officers of the Alumni Association, the Superintendents of the Hospitals at which clinical instruction is given, and the medical members of the governing bodies of the University. This reception was held Friday evening, March 2, and the experiment proved to be so successful that the Faculty has voted to give one every year soon after the opening of the School.

Buildings. — During the past year, in addition to the usual repairs required from time to time, a number of important changes have been made in the Boylston Street building, on account of the necessity of providing for the better preservation of property and of material for instruction, and for increasing the facilities for both teaching and research.

Instead of the former enclosure, called the "coat room," for the reception of the students' overcoats and hats (an arrangement which proved somewhat unsatisfactory for the safe keeping of the property), 435 lockers, with duplicate and master keys, have been placed in the hall and students' study, so that each student is now provided with his own locker for his clothing, books, and instruments.

The former refrigerator for the preservation of anatomical and pathological material, having been worn out, has been replaced by an elaborate cold-storage room, 52½ feet in length by 10 feet 2 inches in breadth and 9 feet 8 inches in height, in which the temperature is kept from 20° to 30° F. by the ammonia process, the machinery for which may be operated either by steam or electric power, both the steam engine and the electric motor for this purpose having been set during the past summer in a small room adjoining the boiler room in the basement.

In the Dissecting room and the Demonstrator's room incandescent lamps have been introduced to replace the gas burners, since it was found that the heat generated by the gas had a destructive effect upon the material, and being reflected upon the heads of the students produced much discomfort, if not some injury. The gas fixtures have been retained, however, to be used in case of accident to the electric service. In addition to the arc light in Lecture room A for lantern projections, and the one in the physiological laboratory for photographic purposes, a third has been placed in the bacteriological laboratory for microphotography.

After eleven years of use it was found that the supply pipe from the water main and many of the larger service pipes had become almost completely occluded by the formation of rust, so that when a considerable quantity of water was being drawn in the basement, none could be obtained in the upper portion of the building. This has necessitated the introduction of a new 3-inch supply pipe and the substitution of new 2-inch service pipes in the place of the old 1½-inch pipes.

Extensive alterations have also been made in the old North Grove Street building. Its interior has been largely remodelled and renovated by the Dental School, and the Building Committee has caused the roof and exterior to be put in thorough repair, and new brick corners have been substituted for the old wooden slabs, many of which had completely decayed and been torn off by the storms of the past winter.

The special work done in the Medical School in addition to the regular instruction may be summarized as follows: —

Anatomy. — The Shattuck Lecture on "The Range and Significance of Variation in the Human Skeleton," which was delivered by Professor Dwight June 12, 1894, embodied the results of a great amount of work done during many years in the dissecting room. So did also a paper on "Methods of Estimating the Height from Parts of the Skeleton," which was read by Professor Dwight, May 31, 1894, at Washington, before the Association of American Anatomists at the Congress of American Physicians and Surgeons.

Chemistry. — During the past year Professor Wood has continued the studies upon uræmia in conjunction with Professor F. C. Shattuck. Special investigation of the urine in tubercular disease of the kidneys and urinary passages have been made by Professor Wood and Dr. J. B. Ogden.

Professor Hills has continued his study of chronic arsenical poisoning. The results of his investigations into the frequency of the occurrence of arsenic at the present time in papers, fabrics, and other articles of domestic use are embodied in a report published in the twenty-third annual report of the Massachusetts State Board of Health.

Professor Hills has also studied the frequency of the occurrence of minute quantities of arsenic in the system, its elimination in cases of chronic poisoning, and the effects of small amounts of arsenic upon the kidneys. The results thus far obtained were presented in a paper read before the Boston Society of Medical Observation, May 7, 1894. This paper will soon be published in the Boston Medical and Surgical Journal.

Physiology. — In the physiological laboratory during the past year Asst. Professor William Townsend Porter has investigated the path of the respiratory impulse from the bulb to the phrenic nuclei and has published the results of his work in the Centralblatt für Physiologie, June 30, 1894, and in the Verhandlungen der physiologischen Gesellschaft zu Berlin, July 20, 1894. Investigations into other points connected with the physiology of respiration have also been made and the results are ready for publication. Dr. Porter has also continued his statistical studies on the growth of children.

Dr. George N. Stewart, Assistant in Physiology, has continued his study of the rate of blood-flow in various organs by methods of his own devising. Some of his results were reported to the American Physiological Society at their meeting in Washington in May, 1894.

Dr. Stewart has also investigated some points in the chemistry of muscles and reported his results at the same meeting.

Mr. G. C. Dolliver has continued his study of the effect of fatigue on the rate of transmission of nerve impulses.

Dr. C. A. Ewald, as holder of a Bullard fellowship, has, under Dr. Stewart's direction, studied the effects of varying rates of stimulation of afferent and efferent nerve fibres.

Mr. Edwin Leonard, Jr., has studied the changes in the length of a muscle during rigor mortis occuring at various temperatures.

Bacteriology. — Professor Ernst has done some work upon the tox-albumin of diphtheria and has had a general superintendence over the greater part of the other special work done in the laboratory.

Dr. J. H. McCollom, assisted by others when work pressed, has carried on a series of investigations of doubtful cases of diphtheria to determine the value of the method of cultural diagnosis in such cases.

Dr. M. W. Wood, Surgeon and Major, U. S. A., has carried on some exceedingly interesting experiments upon methods of cilia stains, and upon the cultivation of the gonococcus.

Mr. E. A. Darling has done much work upon the differential diagnosis between the bacillus coli communis and the bacillus of typhoid fever.

Dr. G. B. Henshaw made some important investigations upon the differential diagnosis of the bacteria as made by the microspectroscope, which it is hoped will be carried further.

The facilities of the laboratory have been made large use of by Professor Warren in the preparation of the plates for his new volume, and one of the laboratory assistants, Dr. A. K. Stone, has devoted most of his time to helping on this work.

The laboratory has been taxed to its utmost to provide for the graduate instruction called for, and its staff has suffered a serious loss in the retirement of Dr. Henry Jackson.

Museum. — During the past year, in order to facilitate the use of the specimens by the instructors, separate alcoves have been set apart for specimens illustrating the subjects of their special teaching. This arrangement has already been made for Orthopedic Surgery, Diseases of Children, and the Ear; and it is proposed to extend it as far as practicable in the future.

The work of renumbering the specimens was begun early in the year, and continued with interruptions, caused by the ill health of the student assistant, throughout the year. This is the first step in the preparation of a card catalogue.

The Museum was opened daily for two hours to the students, who came in considerable numbers to study the models and preparations.

The osteological collection has been largely increased by preparations from the dissecting room, and the pathological collection by a number of rare cases from the hospital.

Pathology. — The following list of published articles shows the special work done in the department: —

By Professor W. T. COUNCILMAN. — On Sudden Death due to Heart Disease. Embolism of the Mesenteric Artery. Gonorrhoeal Myocarditis, and the reports of a Case of Multiple Rupture of Internal Organs produced by a fall; Syphilis of the Heart; Condition of the Kidneys in Puerperal Eclampsia.

By Dr. J. H. WRIGHT. — Studies in the Pathology of Diphtheria. Ueber das Vorkommen des Bacillus Diphtheria Ausserhalt des Körpers. On the Cultivation of Gonococcus from Cases of Gonorrhoea, Ophthalmia Purulenta, and Pyosalpinx.

By Dr. W. H. PRESCOTT. — Observations on Pneumonia.

By Dr. E. W. DWIGHT. — A Study of 169 Autopsies in which Fractures of the Skull were found.

By Dr. J. L. MORSE. — Bacteriology of Diphtheria.

By Dr. E. W. TAYLOR. — The Study of the Anatomy of the Central Nervous System.

By Professor J. J. PUTNAM and Dr. TAYLOR. — Anterior Poliomyelitis Acuta.

Dr. Edward W. Taylor has given to the students of the second year, and such others as cared to attend, a voluntary course of weekly lectures during the second half of the year, on "The Anatomy and Pathology of the Central Nervous System, with especial reference to the diagnosis of organic diseases of the spinal cord and brain."

During the year the following courses of free evening lectures were given to medical graduates: —

October 18, 25, 1893. — Middle Ear Operations. Professor C. J. BLAKE.

November 1, 8. — The Topographical Anatomy of the Thorax and Abdomen, illustrated by frozen sections. Professor THOMAS DWIGHT.

November 15, 22, December 6. — The Applied Anatomy and Surgery of the Vermiform Appendix. The Anatomy and Surgery of the Gall Bladder, and Abdominal Emergencies. Asst. Professor M. H. RICHARDSON.

December 13, 20. — Anthropometry and the Laws of Growth. Professor H. P. BOWDITCH.

December 27, January 3, 1894. — Structure and Functions of the Uterus. Professor C. S. MINOT.

January 10, 17. — Advances in Bacteriology. Asst. Professor H. C. ERNST.

January 24, 31. — Mental Physiology. Dr. EDWARD COWLES.

February 7, 14. — The Pathology of the Fallopian Tubes including Tubal Pregnancy. Dr. W. F. Whitney.

February 21, 28. — Urinary Diagnosis. Professor E. S. Wood.

March 7, 14. — Ovariotomy. Dr. John Homans.

March 21, 28. — The Present Status of the Therapeutics of Nervous Diseases. Professor J. J. Putnam.

April 4, 11. — Traumatic Nervous Affections. Dr. P. C. Knapp.

April 18. — Functional Nervous Disturbances due to Ocular Errors. Dr. Myles Standish.

April 25, May 2. — Infant Feeding. Professor T. M. Rotch.

Scholarships, Pecuniary Aid. — A change has been made in the method of awarding scholarships and pecuniary aid to students. Heretofore applications have been made by letters which were received at any time previous to the meeting of the Executive Committee, just before the first meeting of the Faculty at the beginning of the School year. The result was that very little time was allowed for a consideration of the applications, as the award was made at the first meeting of the Faculty. It was ordered that this year, and hereafter, all applications from members of the School for scholarships or pecuniary aid must be handed to the Dean on or before May 30th of each year. Applications for the Cheever Scholarship, which is limited to students of the first year, must be handed to the Dean on or before November 30th.

A special blank form of application was prepared which applicants were obliged to fill out and which thus gave the facts desirable for a proper consideration of each application.

The Claudius M. Jones Scholarship and the Orlando W. Doe Scholarship were awarded this year for the first time. Two new Scholarships have been established: the Charles Pratt Strong Scholarship with an income at present of one hundred dollars, and the Lewis and Harriet Hayden Scholarship for colored students with an income of upwards of one hundred dollars.

The scholarships were awarded as follows: —

1st Barringer	Scholarship,	G. L. Barney . .	4th Class.
2d "	"	H. F. Hewes . . .	3d "
Doe	"	J. Selva	4th "
Jones	"	N. B. Potter . . .	3d "
Sweetzer	"	C. L. Mix	3d "
Faculty	"	B. H. Metcalf . .	3d "
"	"	A. T. Mann . . .	2d "
"	"	M. C. Bamji . . .	2d "
"	"	H. A. Anderson .	2d "
Cheever	"	G. W Moorehouse	1st "

The John Ware Fellowship was awarded C. A. Ewald of the fourth class for an investigation into the influence of the nerves of muscular sense on the rate of the heart beat.

The Charles E. Ware Fellowship was awarded Richard Edes of the third class for an investigation of the character of newly-formed connective tissue.

The statistics of the School will be found in the appended tables.

WILLIAM L. RICHARDSON, *Dean.*

COURSES OF INSTRUCTION, 1893–94.

FIRST YEAR.

Anatomy. — Professor T. DWIGHT, Demonstrator DEXTER, Instructor CONANT, Asst. Demonstrator MUNRO, Assistant TENNEY, Assistant BROOKS, Assistant C. A. PORTER. 9 hours per week. 107 students examined.

Physiology. — Professor H. P. BOWDITCH, Asst. Professor W. T. PORTER, Instructor DAVIS, Assistant STUART. 6½ hours per week. 147 students examined.

Histology and Embryology. — Professor MINOT, Instructor QUINCY, Assistant E. M. GREENE, Assistant AMES. 5½ hours per week. 112 students examined.

Medical Chemistry. — Associate Professor HILLS, Assistant WORCESTER, Assistant OGDEN. 3 hours per week. 99 students examined.

Hygiene. — Instructor HARRINGTON. ½ hour per week.

Bacteriology. — Asst. Professor ERNST, Demonstrator JACKSON, Assistant STONE, Assistant BURR, Assistant MCCOLLOM. 1 hour per week. 111 students examined.

SECOND YEAR.

Advanced Anatomy. — Professor T. DWIGHT, Asst. Professor M. H. RICHARDSON. 4 hours per week. 103 students examined.

Pathology and Pathological Anatomy. — Professor COUNCILMAN, Assistant TAYLOR, Assistant E. W. DWIGHT, Assistant WRIGHT, Assistant PRESCOTT. 8 hours per week. 107 students examined.

Clinical Chemistry. — Professor WOOD, Assistant OGDEN. 4 hours per week. 118 students examined.

Therapeutics. — Instructor HARRINGTON, Demonstrator CHADBOURNE. 2 hours per week. 109 students examined.

Theory and Practice. — Professor FITZ, Instructor CUTLER. 2 hours per week.

Clinical Medicine. — Professor SHATTUCK, Associate Professor MASON, Instructor GANNETT, Instructor WITHINGTON, Assistant V. Y. BOWDITCH, Assistant JACKSON, Assistant SEARS, Instructor VICKERY. 4½ hours per week.

Surgery and Clinical Surgery. — Professor WARREN, Professor C. B. PORTER, Instructor CABOT, Instructor MIXTER, Assistant WATSON, Instructor HOMANS, Instructor GAY, Instructor BURRELL, Assistant MONKS, Assistant ELLIOT, Assistant HARRINGTON, Assistant SCUDDER. 8½ hours per week.

THIRD YEAR.

Theory and Practice of Medicine. — Professor Fitz, Instructor Cutler. 3 hours per week. 109 students examined.

Surgery. — Professor Warren, Instructor Cabot, Assistant Watson, Instructor Mixter, Instructor Gay, Instructor Homans. 3 hours per week. 112 students examined.

Clinical Surgery. — Professor C. B. Porter, Instructor Burrell, Assistant Monks, Assistant Elliot, Assistant Harrington, Assistant Scudder. 2 hours per week. 114 students examined.

Clinical Medicine. — Professor Shattuck, Associate Professor Mason, Instructor Gannett, Instructor Withington, Assistant V. Y. Bowditch, Instructor Vickery, Assistant Jackson, Assistant Sears. 3 hours per week. 111 students examined.

Obstetrics. — Professor W. L. Richardson, Instructor C. M. Green, Assistant Reynolds, Assistant Townsend. 3⅔ hours per week. 119 students examined.

Electives.

Ophthalmology. — Professor Wadsworth, Assistant Standish, Instructor Cheney. 2 hours per week. 1 student examined.

Otology. — Professor Blake, Professor J. O. Green, Assistant Bryant. 1 hour per week. 1 student examined.

Dermatology. — Professor White. 2 hours per week. 1 student examined.

Diseases of the Nervous System. — Professor Putnam, Instructor Walton, Instructor Knapp. 2 hours per week. 8 students examined.

Diseases of Children. — Professor Rotch, Instructor Buckingham, Assistant Wentworth. 2 hours per week. 30 students examined.

Mental Diseases. — Lecturer Fisher, Instructor Cowles. 1 hour per week.

Gynaecology. — Professor Baker, Instructor Davenport, Assistant Swift, Instructor Washburn, Instructor Burrage. 1½ hours per week. 79 students examined.

Legal Medicine. — Professor Draper. 1 hour per week.

Bacteriology. — Asst. Professor Ernst, Demonstrator Jackson, Assistant Stone, Assistant Burr, Assistant McCollom. 1 hour per week.

Syphilis. — Instructor Post. 1 hour per week.

FOURTH YEAR.

Ophthalmology. — Professor Wadsworth, Assistant Standish, Instructor Cheney. 3 hours per week. 8 students examined.

Dermatology. — Professor White. 2 hours per week. 6 students examined.

Otology. — Professor Blake, Professor J. O. Green, Assistant Bryant. 3 hours per week. 8 students examined.

Laryngology. — Instructor DeBlois, Instructor Farlow, Instructor Coolidge. 2 hours per week. 4 students examined.

Gynaecology. — Professor Baker, Instructor Davenport, Assistant Swift, Instructor Washburn, Instructor Burrage. 2 hours per week. 22 students examined.

Diseases of Children. — Professor Rotch, Instructor Buckingham, Assistant Wentworth. 1 hour per week. 24 students examined.

Diseases of the Nervous System. — Professor Putnam, Instructor Walton, Instructor Knapp. 1 hour per week. 5 students examined.

Mental Diseases. — Lecturer Fisher, Instructor Cowles. 1¼ hours per week.

Clinical Obstetrics. — Professor W. L. Richardson, Associate Professor C. M. Green, Assistant Reynolds, Assistant Townsend. 1 hour per week. 24 students examined.

Operative Obstetrics. — Professor W. L. Richardson, Associate Professor C. M. Green, Assistant Reynolds, Assistant Townsend. ½ hour per week. 16 students examined.

Operative Surgery. — Professor C. B. Porter, Instructor Burrell, Assistant Monks, Assistant Elliot, Assistant Harrington, Assistant Scudder. ½ hour per week. 11 students examined.

Legal Medicine. — Professor Draper. ½ hour per week. 8 students examined.

Hygiene. — Lecturer Durgin. ½ hour per week. 6 students examined.

Bacteriology. — Asst. Professor Ernst, Demonstrator Jackson, Assistant Stone, Assistant Burr, Assistant McCollom. ½ hour per week. 21 students examined.

Syphilis. — Instructor Greenough. 1½ hours per week.

Orthopaedics. — Asst. Professor Bradford. ¾ hour per week.

Clinical Medicine. — Instructor Gannett, Instructor Vickery. 1 hour per week.

Pathology. — Dr. W. F. Whitney. ¾ hour per week.

Surgery. — Professor Warren, Instructor Homans, Instructor Gay, Instructor Cabot, Assistant Watson, Instructor Burrell. 3 hours per week.

Many of the studies of the fourth year were elective.

TABLE I. — GENERAL STATISTICS OF THE SCHOOL.

EXAMINATIONS FOR ADMISSION.

			Physics.	Latin.	English.	Elective.	Gen. Chem.	Qual. Analysis.	Passed.	Rejected.
1894.	June	Offered	61	60	65	66	39	24	69	2
		Conditioned	19	8	0	7	16	8		
	Sept.	Offered	80	71	65	54	62	21	79	3
		Conditioned	31	11	2	1	23	1		

New matriculants . . .	119	Graduates	2
		Undergraduates .	117

Of these 27 % were College graduates.

The whole number of students in attendance: —

In courses for graduates	52
Fourth Class	38
Third Class	114
Second Class	133
First Class	135
Total	472

	3 yrs. Course.	4 yrs. Course.
Applicants for Degree	105	41
Rejected	15	6
Graduated	90	35

Of the 35 students who received the degree of Doctor of Medicine in the four years' course, 15 received the degree *cum laude*, and 8 received the degree of Master of Arts together with that of Doctor of Medicine.

The following theses were recommended for mention on the Commencement programme: —

Eugene Abraham Darling, A.B., on the Bacillus Coli Communis.

George Bridges Henshaw, A.B., on the Use of the Microspectroscope in Bacteriology.

	SUMMER COURSES.					GRADUATE COURSES.				
	1890.	1891.	1892.	1893.	1894.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
Courses taken .	60	77	84	111	101	64	145	52	103	82
Students	45	65	67	81	93	32	43	33	52	53
Receipts	$1425	$1817	$1865	$2650	$2355	$1295	$2137	$1240	$2063	$2010

TABLE II.—JUNE EXAMINATIONS.

		First Class										and						Second Class					
		Histology.		Bacteriology.		Medical Chemistry.		Anatomy.		Physiology.		General Chemistry.		Medical Chemistry.		Materia Medica.		Path. Anatomy.		Adv. Anatomy.		Therapeutics.	
			%		%		%		%		%		%		%		%		%		%		%
1890	Passed							49		68		51		58		65		82		46		77	
	Rejected							28	36	9	11	11	17	7	10	12	15	13	13	26	36	11	12
	Total							77		77		62		65		77		95		72		88	
1891	Passed							94		87		76		66		86		56		51		65	
	Rejected							31	24	28	24	22	22	15	18	33	27	7	11	19	27	10	13
	Total							125		115		98		81		119		63		70		75	
1892	Passed							107		102		79		108		14		95		116		78	
	Rejected							39	21	38	27	31	28	18	14	1	7	12	11	3	3	23	23
	Total							136		140		110		126		15		107		119		101	
1893	Passed	76		111		88		76		91				133		4		116		114		78	
	Rejected	15	16	17	13	32	26	55	42	35	27			23	14	0	0	24	17	11	9	47	37
	Total	91		128		120		131		126				156		4		140		125		125	
1894	Passed	80		96		74		80		112				94				89		89		78	
	Rejected	32	28	15	13	25	25	27	25	35	24			19	16			18	17	14	13	31	28
	Total	112		111		90		107		147				113				107		103		109	

TABLE II. — JUNE EXAMINATIONS, CONTINUED.

		Third Class. — Electives.																									
		Theory and Practice.		Clinical Medicine		Surgery.		Clinical Surgery.		Thera-peutics.		Obstetrics.		Diseases of Children.		Derma-tology.		Gynæ-cology.		Nervous Diseases.		Legal Medicine.		Mental Disease.		Ophthal-mology.		Otology.	
			%		%		%		%		%		%		%		%		%		%		%		%		%		%
1890	Passed	77		77		75		72				73		69				3		1		1				5		2	
	Rejected	7	8	7	8	5	6	0	0			11	13	3	4			0	0	0	0	0	0			1	16	0	0
	Total	84		84		80		72				84		72				3		1		1				6		2	
1891	Passed	73		70		75		62				72		60		1		8								2		1	
	Rejected	7	8	5	6	6	7	1	1			10	12	9	13	0	0	0	0							0		0	0
	Total	80		75		81		63				82		69		1		8								2		1	
1892	Passed	72		65		64		74				64		20		2		39		1									
	Rejected	2	3	4	6	3	4	0	0			5	7	3	13	0	0	0	0	0	0						0		
	Total	74		69		67		74				69		23		2		39		1									
1893	Passed	95		93		96		90				101		30		7		58								3		5	
	Rejected	1	1	12	11	3	3	5	5			2	2	0	0	0	0	1	17							0	0	0	0
	Total	96		105		99		95				103		30		7		59								3		5	
1894	Passed	78		108		99		104				108		30		1		71		8						0		0	
	Rejected	31	28	3	3	13	11	10	9			11	9	0	0	0	0	8	10	0	0					1	100	1	100
	Total	109		111		112		114				119		30		1		79		8						1		1	

TABLE II. — JUNE EXAMINATIONS, CONTINUED.

		Fourth Class.																											
		Ophthalmology.		Dermatology.		Gynaecology.		Clinical Obstetrics.		Diseases of Children.		Diseases of Nervous System.		Mental Diseases.		Legal Medicine.		Otology.		Laryngology.		Operative Obstetrics.		Operative Surgery.		Bacteriology.		Hygiene.	
			%		%		%		%		%		%		%		%		%		%		%		%		%		%
1890	Passed	3		5		13		12		15				1		1		1		1		16		6		1		1	
	Rejected	2	60	0	0	0	0	0	0	2	11			0	0	0	0	0	0	0	0	1	6	2	25	0	0	0	0
	Total	5		5		13		12		17				1		1		1		1		17		8		1		1	
1891	Passed	11		7		13		7		19		1		1		4		2		1		15		5		2		1	
	Rejected	0	0	0	0	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	11		7		13		8		19		1		1		4		2		1		15		5		2		1	
1892	Passed	4		13		21		17		33						9		3		2		17		6		1		5	
	Rejected	3	43	0	0	2	9	0	0	0	0		0			0	0	0	0	0	0	4	19	2	25	0	0	0	0
	Total	7		13		23		17		33						9		3		2		21		8		1		5	
1893	Passed	5		4		15		7		14		6				6		3		1		6		4		10			
	Rejected	1	16	0	0	0	0	1	12	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		
	Total	6		4		15		8		14		6				6		3		1		6		4		10			
1984	Passed	5		6		19		23		24		5				8		8		4		15		10		20		6	
	Rejected	0	0	0	0	3	0	1	0	0	0	0	0			0	0	0	0	0	0	1	6	1	10	1	5	0	0
	Total	5		6		22		24		24		5				8		8		4		16		11		21		6	

THE DENTAL SCHOOL.

To the President of the University:

Sir, — I beg leave to submit the following report, as Dean of the Dental Faculty, for the year 1893–94: —

The number of students matriculating was sixty-three, divided as follows: first, or Freshman year, thirty-one; second, or Junior year, fourteen; third, or Senior year, eighteen. Of these, two from the first-year class, subsequently left the School and entered the Medical School. At the Commencement in June, 1894, fourteen were graduated, and five failed to pass one or more of the examinations. In order to obtain the degree it is necessary that the student pass examinations in all the required studies.

The studies of the first year, excepting elementary practical Operative Dentistry, are wholly in the Medical School, consisting of Anatomy, Professor Dwight, with dissections; Physiology, Professor Bowditch, with practical work in the Physiological Laboratory; General and Medical Chemistry, with abundant laboratory work, Associate Professor Hills; and Histology, Professor Minot. In order to be allowed to pass on to the second year, each student must pass in a majority of these studies. Drs. Monks, Worcester and Walton, of the Medical School corps of instructors have also given regular instruction in the Dental School in their respective specialties of Surgical Pathology, Dental Chemistry, and Neurology, during the second and third year. The professors and instructors of the Dental School also give lectures on the subjects of their respective branches, devoting thereto the first hour of each week day. The rest of each day is devoted to practical Operative and Mechanical Dentistry in their respective laboratories. The subjects of these lectures are Dental Pathology, Orthodontia, Materia Medica and Therapeutics, Oral Anatomy and Physiology, Bacteriology, Crown and Bridge Work, Operative Dentistry, and Mechanical Dentistry. The practical branches of Dentistry, requiring, besides a thorough knowledge of the theory, manipulative skill of a high order which can only be obtained by devoting much time and effort to practical work, necessarily call for much the larger part of the students' time. For this purpose the Mechanical and Operative Infirmaries afford ample opportunities. Patients are never wanting. The work is performed under the supervision of interested and skilled instructors, and its character is such that, without advertising, our rooms are filled with patients. These Infirmaries, while fully performing the functions of Schools for the instruction of students, are also Hospitals or Dispensaries where the poor can obtain relief from much terribly acute suffering. Not only are teeth cared for, but artificial teeth are inserted, and irregular and deformed mouths made presentable and capable of performing the functions of mastication. Artificial vela are also inserted for the closure of cleft palates and the restoration of the functions of mastication and deglution, and fractures of the jaws are repaired. During the last year the construction of an artificial nose was undertaken by one of our students, and under the direction of the Demonstrator of Mechanical Dentistry this unusual operation was carried to a successful conclusion. Many of these cases are seldom seen in private practice; and such is the success of our dental methods that surgeons are getting to recognize their utility, and patients having cleft palates and fractured jaws are being sent to us for treatment in greater and greater numbers, not only by private practitioners, but from hospitals. Clinical instruction of a very valuable kind in special methods of practice has been given by Drs. Dwight M. Clapp and W. H. Potter.

The change to a required three-years' course in the School rendered feasible the separation of the second and third-year men into two classes, and these with their instructors so crowded our rooms that more space became imperatively necessary. Therefore, permission was obtained from the Faculty of the Medical School to further alter and improve the old building on North Grove Street to fit it for our uses. During the summer vacation this work has been going on and is now about completed. Very commodious Operating and Mechanical rooms are now secured, and, although not crowded, are already well filled; so that the necessity for a new building is still pressing on us. The attempt to raise money for this purpose, though suspended during the hard times, has not been dropped, but will be revived whenever circumstances render it feasible.

In the Operative department, Drs. Howe, Kelley and Codman declined a reappointment, and Drs. C. E. Perkins, C. M. Keep and F. T. Taylor, were appointed instructors for one year.

In the Mechanical department all the instructors have retained their positions. The work of the instructors in both departments has been exceptionally interested and good, and they have succeeded in imparting their own interest to the students under their instruction.

Dr. Nathan P. Wyllie was appointed Assistant Demonstrator in Operative Dentistry. Drs. Paul and Moriarty have done their usual good work as demonstrators, and have consented to retain their positions for another year.

In the department of Orthodontia, or Teeth-regulation, thirty-eight patients were treated, and seventy-eight appliances made and applied. The appreciation by the patients of the work done for them is increasing. Many difficult and, at first sight, apparently hopeless cases have been successfully treated, so that deformed features have been made presentable, and faulty articulation cured.

Dr. Wm. P. Cooke has continued his successful management of the department of Crown and Bridge Work, and he has received an appointment as instructor in this specialty for three years.

The usual number of lectures was given by each professor in his special department, following the same general course as in former years.

In the Operative department, the number of patients treated was 5477, for whom 17,061 operations of every variety were performed. In the Mechanical department there were over 1600 operations, mainly the insertion of artificial teeth on the various bases; but including several cases of cleft palate, several fractured jaws, and the one artificial nose, already referred to above, which is so natural that a close inspection is required to discover its real nature.

Dr. Boardman has continued his faithful and interested care of our Museum, and it continues to grow by contributions from Alumni and other practitioners who are interested in the collection. The new class entering in September, 1894, is by far the largest in the history of the School, and the quality of their entrance examinations showed great improvement over that of former years.

THOMAS H. CHANDLER, *Dean*.

BOSTON, November 6, 1894.

THE BUSSEY INSTITUTION.

To the President of the University:

Sir, — I respectfully submit the following report upon the Bussey Institution for the year 1893–94: —

Sixteen students were in attendance — two of them natives of Japan — and the Degree of Bachelor of Agricultural Science was conferred upon one student at Commencement.

Instruction was given as usual in Agriculture by Messrs. Motley and Hersey, in Horticulture by Mr. Watson, in Botany by Mr. Kidder, and in Agricultural Chemistry by Professor Storer. In addition to their work at the Bussey Institution, several of the students spent more or less time at Cambridge in the class rooms of the Lawrence Scientific School and the College.

The decision of the Corporation, in the summer of 1894, that a very large part of the Bussey Farm should be transferred to the Arnold Arboretum was a severe blow to the agricultural department. Not only was the farm deprived by this act of all the upland which is suitable for tests and experiments, but a not inconsiderable source of income to the agricultural department has been cut off. Taking rainy and droughty years as they came, the net receipts of that part of the farm which has this year been added to the Arboretum fluctuated between $700 and $900 annually, and this sum could readily have been increased as the income of the farm from other sources became assured and the earnings thus obtained permitted the carrying out of contemplated improvements. The real gains recently made by the farm are well illustrated by the fact that if the seventy acres of upland which have this year been alienated had been taken away even so recently as two or three years ago the farm would have been compelled to resort to the highly unprofitable device of buying hay to feed the animals which are taken to board there or else to have gone out of business altogether. Thanks to the skill and good judgment of the farm superintendent, Mr. Edmund Hersey, such radical improvements have been made in the low-lying meadows, that large crops of excellent hay are now obtained from them, in place of the wild sedges which formerly grew there, and the farm will consequently still be able to maintain itself. But it is, at the least, disheartening, at the moment when a previously neglected part of the estate has with much toil and trouble been brought into extremely good condition and the way thus been made plain for a liberal management of the upland — and for the making of improvements there — that the whole of it should be taken away without a shadow of advantage or compensation to the department which previously enjoyed the income from the land.

F. H. STORER, *Dean.*

THE VETERINARY SCHOOL.

To the President of the University:—

Sir, — I beg to submit herewith the twelfth annual report of the School of Veterinary Medicine.

Of the seven members of the third class all presented themselves for the final examinations, five being successful. There were four other applications for the degree, made by students who had conformed to the requirements of the School as to time of attendance, etc., but who, for various reasons, had not been eligible to membership in the third class. Of these, two were successful; so that there were seven graduates for the year.

There are now sixty-one registered students in the School, divided as follows: Nine in the third class, fourteen in the second, twenty-eight in the first, and ten in the special. There were thirty-nine applicants for the admission examination, of whom twenty-three were successful.

It will be seen, therefore, that the encouraging growth of the last few years, in the number of students coming to us, has been fully maintained; and when it is remembered that five years ago we had an entire attendance of but twenty students I cannot but think that the progress in this direction will be considered satisfactory.

In my last report to you the fact was pointed out that two important subjects of study had been added to the course; and that this enlargement had been possible because Professor Whitney and Dr. Foss had been willing to give instruction in Comparative Pathology and the Diseases of Dogs, respectively, without remuneration. This instruction is still being given, but no provision whatever has been made for paying the instructors. This is not as it should be; and I earnestly desire that the valuable services of these two teachers shall receive some acknowledgement. Enthusiasm in one's profession, and a certain amount of self-sacrifice, are commendable, and may properly be expected; but I do not feel that it is a healthful policy for the School to accept gratuitous service except for special objects and brief periods.

I also called your attention last year to the necessity of establishing a Pathological Laboratory in the School, that our students might have full instruction in branches of medicine which were then rapidly developing, and would undoubtedly become an important part of veterinary instruction in the near future. This appeal, like others of the sort that I have had the privilege of making in these reports, from time to time during the last twelve years, has as yet met with no response. If such a laboratory could have been established at that time, it could now have been offered with all its resources to the State Board of Cattle Commissioners for their investigations, and would have become a source of mutual advantages. As it is, that Board will now establish a laboratory of its own in which, I very much hope, our students will be permitted to receive some valuable instruction. This by no means, however, does away with the necessity of a laboratory under the direction of the School; since the amount of instruction that can now be given must be limited by the needs and requirements of the Commission.

The question of the advisability of establishing one or two scholarships in the School for meritorious and needy students of the second or third years, has been presented to the Faculty; and the Committee to whom the matter was referred report that it is much to be hoped that the Faculty will be able to see its way to establish some scholarships, notwithstanding the limited financial resources of the School; and further, that in their belief this mode of beneficence may appeal to some charitably disposed person who may be induced to found scholarships in the School. There has been no year in our experience in which such aids could not have been well used; and several good students have been obliged to leave the School from lack of money before completing their studies. This always seems hard, even when the possibility of such a result has been realized by the student from the first; but when it happens, as it has several times, that some entirely unforseen circumstances make further tuition-payments impossible for him, the disappointment and loss are doubly severe.

Finances. — The itemized account in the Statement of the Treasurer of the University shows that of the gross receipts of the Veterinary Department the School has earned $5305.00, as against $4378.27 for the previous year — a gain of $926.73. A very careful estimate has again shown the running expenses to be about $8000.00, — certainly no more than that amount, — therefore the deficit incurred by the School as a result of its operations during the year is about $2,695.00. An endowment of $60,000.00 would bring expenses within receipts.

Another and, I think, eminently proper and safe means of adding to the income of the School would be to increase the tuition-fee. Heretofore this charge has been $100.00 a year with $5.00 matriculation fee, paid at the beginning of the first year only, and a fee of $30.00 payable at graduation. This is the only department of the University which charges less than $150.00 a year, except the Divinity School. During the year just passed it has cost the School very nearly $157.00

to teach each student. I therefore recommend that after the close of the year 1894–95 all students coming to this School be required to pay a tuition-fee of $150.00 a year; and that no further fee be charged either for matriculation or graduation.

As pointed out in this report for 1891–92, the American veterinary profession had come at that time to a thorough appreciation of the value of a three years' course of graded study, as instituted by Harvard University. This feeling has constantly gained strength since then, and during the last year a convention of representatives from all of the Schools was called, by the United States Veterinary Medical Association, to meet in Buffalo for the purpose of considering whether it would be possible for all Schools to institute similar courses.

This meeting was attended by representatives of five out of fourteen Schools. After considerable discussion it was voted:—

"First, That it is the sense of this meeting that hereafter all veterinary schools issuing diplomas shall require attendance on a course of instruction extending over three years of not less than six months each, the time to be counted from the commencement to the end of the actual instruction given in each year, exclusive of time devoted to final examinations; and that no diploma shall be issued to any candidate until he has complied with all such requirements.

"Second, That the first four sections, on page 405 of the Harvard Announcement for 1893–94, under the head of Admissions, be recommended for adoption:—That each applicant will be required to read aloud a selected passage from ordinary English prose; to write legibly and correctly an English composition of not less than two hundred words; to write English prose from dictation; and the simple and compound rules of Arithmetic, including decimal fractions.

"Third, That all examination papers, including those for admission, be preserved for a period of not less than six months, that they may be inspected by any properly delegated body from the United States Veterinary Medical Association.

"Fourth, That there shall be, at least, four veterinarians attached to the teaching staff of all veterinary schools issuing diplomas."

Following this an Association of the Veterinary Faculties of North America was formed, temporary officers were elected, and the Convention adjourned to meet again in Philadelphia in September.

The Philadelphia meeting was called to order on September 18th; a number of sessions were held; the action of the Buffalo meeting was approved; the entire list of recommendations, as herein given, was accepted; and the constitution of the new Association was signed by the representatives of ten out of the fourteen schools.

While it is true that the standard herein laid down is far from being what it should be, or what is already demanded by us, yet all persons will see that for a first effort in the upward direction, the step is a great one, placing, as it does, a large majority of the schools upon the basis of a three-years' graded course, with an honestly maintained entrance examination.

The promise for the future of the department of veterinary medicine becomes brighter and brighter. Much has been done without endowment; much more remains to be accomplished. Endowment for both School and Hospital is urgently needed, and would greatly increase the commercial, scientific, and beneficent value of the department.

CHARLES P. LYMAN, *Dean.*

THE VETERINARY HOSPITAL.

To the President of the University:

Sir, — I have the honor to submit, herewith, my report on the Veterinary Hospital for the year 1893–94.

Finances. — The total earnings for the year are $20,126.50, an increase of $253.05 over those of 1892–93. Of this total $1,692.86 was not collected prior to July 31st, and consequently does not appear in the Treasurer's report of the year.

The total expenditure, including salaries of the Hospital staff, was $17,948.04.

The earnings would have materially increased had it not been for the general business depression which began about January 1st, which caused a large portion of the pleasure horses to be wintered in the country, and the truck horses to be used not over half time. In this connection the following facts may be of interest: — For the first five months of the year 1893–94, viz., August, September, October, November and December, the earnings showed an increase in every month over those for the same months of 1892–93, amounting in the total to $900.05; but on January 1st, business began to fall off to such an extent that during the remaining months of the year the earnings were $787.10 less than for the same period of the previous year, so that the total surplus for the year was cut down, as previously indicated, to $253.05. Had the Hospital continued to increase its earnings throughout the year at the rate of the first five months, it would have shown $2,181.42 in excess of the earnings of the previous year; and had the same general business conditions continued throughout the year I can see no reason why we might not have reasonably expected such a result.

The following table shows the earnings of the Hospital for the last eleven years, — that is, ever since its establishment: —

Year.	Earnings.	Year.	Earnings.
1883–84	$9,520.58	1889–90	$18,021.96
1884–85	14,008.40	1890–91	17,463.22
1885–86	14,926.17	1891–92	20,007.48
1886–87	14,649.15	1892–93	19,873.45
1887–88	12,820.07	1893–94	20,126.40
1888–89	15,066.94		

Repairs and improvements have been made during the present year to the extent of $604.08.

Forge. — The work in this division has been conducted in a manner very satisfactory to both the patrons and the officers of the Hospital, and the earnings are in excess of those of any previous year in its history. Demonstrations on horse shoeing have been given daily to the students of the third class.

The Hospital, erected as it was in 1882 when the school was in its infancy, is now not well adapted to carrying on the greatly increased amount of work in the best manner possible; and consequently it is open to unfavorable criticism, which I am sorry to be obliged to say is sometimes just.

A consideration of the following table will show very clearly that the treatment of dogs and other small animals has increased little by little, until now the number of these animals brought hither is considerable. The fair inference is that the people have appreciated more and more the efforts that have been made here to provide good accommodations and intelligent treatment for their animals when suffering from disease and accident.

1883–84	Dogs	189,	other small animals	15.
1884–85	“	230,	“ “ “	4.
1885–86	“	385,	“ “ “	12.
1886–87	“	320,	“ “ “	8.
1887–88	“	259,	“ “ “	18.
1888–89	“	376,	“ “ “	10.
1889–90	“	405,	“ “ “	21.
1890–91	“	418,	“ “ “	30.
1891–92	“	432,	“ “ “	43.
1892–93	“	464,	“ “ “	46.
1893–94	“	568,	“ “ “	79.

While this exhibition is one of considerable satisfaction to the Hospital management, it is still not without its embarassments; the fact being that the full limit of our accommodations for these animals has been reached. Beside the number that were treated here, as shown in the table, there have been 302 dogs and 79 other animals presented to which we could not offer suitable quarters. A dog infirmary, such as we need, should be so arranged as to provide ample space, light and cheerful quarters well-warmed and free from draughts, and all facilities for the proper treatment of the large variety of cases which are brought to us in greater numbers than to any similar institution in the country. Not only are good surroundings essential for the well-being of the patient; they are also necessary for the satisfaction of owners who entrust to our care animals which enter intimately into their domestic and social life, and to which much sentiment attaches. New quarters are absolutely essential for this department. They should contain different wards for the several classes of disease. The floors and walls should be of glazed tiles, and the cages of wire. Wards so fitted can be kept in perfect sanitary condition, and at the same time present a most pleasing effect.

Distemper, which is highly contagious and the most fatal disease among dogs, requires a separate ward, so fitted that it can be thoroughly cleansed and disinfected. The laity thoroughly understand the contagiousness of the disease, and much criticism, both just and unjust, is apt to arise if the kennel arrangements do not afford the most perfect facilities for treating and isolating it. With proper treatment under favorable conditions the mortality from this disease can be greatly diminished. Equally important is a special ward for the various skin diseases to which the dog is liable. Many of these are contagious and stubborn in the extreme, resisting treatment for a long time. A perfectly appointed wash-room in connection with such a ward is of great importance. The treatment of young dogs and puppies is full of difficulties, just as the treatment of sick children is more difficult than that of adults. Young animals should have a ward to themselves.

It is to be hoped that some benevolent person who is able and willing to do something for this favorite animal, may be prevailed upon to provide at least one properly arranged and thoroughly equipped hospital in the United States for the treatment of dogs.

I would again call attention to the pressing need of room for the establishment of a Free Clinic where the animals of the poor may be treated. In our present limited quarters this is impossible. An immense amount of animal suffering can be relieved if some provision can be made whereby a suitable building can be obtained, even though it be somewhat removed from the Hospital.

The records of the Out-Clinic show that 727 horses, 392 dogs and 79 other animals were treated during the year. The hospital has therefore been able to offer to students available clinics as follows:—

Hospital Wards, daily examination and treatment:		
An average of 19 horses each day	6,819	days of treatment.
" " " 24 other animals each day	8,672	" " "
Out Clinics, horses, dogs, and other animals	1,198	animals.
Operations	657	
Examinations for soundness	192	
	17,538	

A table appended shows the classification and the organs involved as they have been presented.

1893–94.	Genito-Urinary.	Locomotory.	Respiratory.	Circulatory.	Nervous.	Digestive.	Special sense.	Operations.	Skin Disease.	New Growths.	Exam. for Soundness.
November .	8	60	19	2	4	46	8	52	26	5	13
December .	9	36	19	9	3	46	2	51	25	9	1
January . .	15	43	10	9	8	33	6	50	30	2	4
February .	6	38	11	5	11	37	7	38	34	5	40
March . .	20	60	10	2	6	63	14	87	46	6	48
April . . .	10	47	30	4	10	48	12	60	30	7	49
May . . .	14	50	36	2	7	43	5	55	38	4	21
June . . .	12	52	23	2	9	49	4	67	32	8	2
July . . .	15	40	24	2	9	42	9	50	21	8	5
August . .	4	31	13	7	5	60	3	32	34	5	6
September	12	35	12	3	9	48	5	46	32	9	1
October . .	9	47	16	2	4	53	5	60	37	5	2
Totals . .	133	539	223	49	85	568	80	657	385	73	192

During the past year there have been treated within the Hospital 495 horses, the combined treatment lasting over a period of 6819 days; also 568 dogs and 79 other animals, the combined treatment lasting over a period of 8672 days.

	Horses.	Other Animals.
Average number of days each animal remained in Hospital . .	14—	15+
Average number in Hospital per day	19—	24+

Instruction. — Special instructions have been given by the surgeons every morning, from 8 to 10, to members of the third class who assist in the application of dressings and the care of all patients in the Hospital wards; the class being divided into three sections, dressers, dispensers, and visitors, serving in rotation in their respective capacities. While the dressers are performing their duties in the Hospital, the dispensers are preparing the necessary medicines and dressings in the Pharmacy, under the direction of the Resident House Surgeon. The visitors in their turn attend all outside calls with the visiting surgeons, a privilege which gives them opportunities of studying the differences between the methods pursued in Hospital and out-door practice.

Every morning, from 10 to 11, a clinical lecture is given in one of the wards to members of the first and second class.

Monday, . . .	Dr. Howard.	Thursday, . .	Prof. Osgood.
Tuesday, . . .	Dr. LaBaw.	Friday, ...	Dr. Leonard.
Wednesday, . .	Prof. Lyman.	Saturday, . . .	Dr. Foss.

From 11 to 1, Surgical Operations, of which there were performed during the past year 657. Members of the first and second classes are expected to be present.

Examinations for soundness, out-clinics, and out-visits, are attended to as presented, it being impossible to have them all at any fixed hour; but as the members of the upper class devote the greater part of the day (when not engaged at lectures) to the Hospital, they get benefit from a large proportion of these cases. Autopsies have been made upon all animals dying in the Hospital.

The subscription plan which has been pursued ever since the foundation of the School, has now been given up. In my report of 1892–93 I called attention to the fact that a guarantee fund of $1500 would render possible its abandonment on May 31st, 1894; and on January 28th I received the following letter from Mr. Augustus Hemenway: —

> "MY DEAR DR. OSGOOD, — I fully concur with what you say in your report on the Veterinary Hospital regarding the advisability of abolishing the subscription plan. We must try to do something about it at the next meeting of the Visiting Committee.
>
> Sincerely yours,
>
> A. HEMENWAY."

Following this, and after some further consideration of the subject, Messrs. Hemenway and Morgan of the Visiting Committee gave the sum of $1500 to the University, to be applied in this way; and at the expiration of the subscription year the plan was definitely abandoned.

FREDERICK H. OSGOOD,
Surgeon in Charge.

BOSTON, November 7, 1894.

THE LIBRARY.

To the President of the University:

Sir, — Three numbers of the *Bulletin of Harvard University* have been issued under the immediate charge of Mr. Tillinghast during the past year. The last one (May, 1894) contained only the official records of the corporation and overseers, and some bibliographical notes, it having been decided to suspend publication of the lists of accessions to the libraries. The publication of the official records having since been assigned to the *Harvard Graduates' Magazine*, on the ground that they would be seen in its pages by a larger number of alumni, no further numbers of the Bulletin will be issued.

We have not added to our *Bibliographical Contributions* during the year.

The accessions to the University Library for the year, and the present extent of the various departments, are as follows: —

Principal Departments.	Volumes added.	Present extent in	
		Volumes.	Pamphlets.
Gore Hall (College Library) .	10,326	323,024	319,331
Law School	1,780	33,931	3,917
Lawrence Scientific School . .	436	3,874	. . .
Divinity School	1,545	26,013	5,162
Medical School	41	2,041	. . .
Museum of Zoölogy	578	24,199	570
Astronomical Observatory . .	250	7,710	9,989
Botanic Garden (Herbarium) .	231	5,630	3,655
Bussey Institution	50	3,500	. . .
Peabody Museum	86	1,360	1,683
Arnold Arboretum	465	5,465	5,500
Totals	15,788	437,747	350,368

If to this total of 437,747 volumes be added the 10,520 volumes of the permanent collections in the laboratories and class rooms, (see below) we have a grand total of 448,267 volumes for the University Library, and if unbound pamphlets be included the total number is 798,635. We must record a serious loss to the department of Biblical literature in the withdrawing by the executors of the late Mrs.

George Livermore of 120 volumes of early bibles, and some other early books and manuscripts, which had been deposited in the library by her husband in 1859. They form part of the library of Mr. Livermore which is to be sold in Boston, in November, 1894.

The Whitney Library of Geology, a part of the collection in the Museum of Zoölogy, is only in part included in the count of the Museum Library; while, on the other hand, no deduction has been made in the general library for volumes parted with on exchange account.

The Medical School depends upon the Collections of the Boston Medical Library Association, kindly thrown open to its use.

The present extent of the laboratory and class-room libraries is as follows: —

	Permanent.	On Deposit.	Totals.
Laboratories.			
1. Chemical	517	151	668
2. Zoölogical	190	. .	190
3. Geological	95	. .	95
4. Botanical	579	. .	579
5. Physical	. .	338	338
6. Physical Geography	295	151	446
7. Mineralogical	180	180	310
Class-Rooms.			
1. Classical	2,926	138	3,064
2. History	1,310	1	1,311
3. United States History	780	. .	780
4. Political Economy	753	. .	753
5. Mathematics	208	136	339
6. French	686	. .	686
7. English	34	. .	34
8. Sanskrit	22	. .	22
9. German	340	. .	340
10. Social Questions	561	. .	561
11. Music	97	. .	97
12. Philosophy	257	15	272
13. Semitic	527	. .	527
14. Romance Languages	218	1	219
Totals	10,520	1,111	11,631

An assistant is sent from the Central Library every week to examine the shelves of these libraries by the shelf-lists, and the titles of missing books are reported at once to the officer of instruction in immediate charge of the library where such loss or misplacement has been discovered. Temporary loans of books from Gore Hall are made to these libraries to facilitate the instruction of the several departments. Three of these libraries were open evenings for use when Gore Hall was closed.

Of the accessions to the Gore Hall Collections there were added by gift 6026 volumes and 16,598 pamphlets; and the accessions also include 928 volumes of bound serials (received in parts), and 422 volumes made by binding pamphlets.

The accessions of recent years to the University Library (excluding the laboratory and class-room libraries) have been as follows: —

In 1879 . .	10,389 vols.	In 1885 . .	14,558 vols.	In 1891 . .	13,276 vols.
" 1880 . .	7,247 "	" 1886 . .	9,191 "	" 1892 . .	13,785 "
" 1881 . .	9,804 "	" 1887 . .	11,924 "	" 1893 . .	22,870 "
" 1882 . .	9,192 "	" 1888 . .	16,468 "	" 1894 . .	15,788 "
" 1883 . .	9,818 "	" 1889 . .	12,253 "		
" 1884 . .	12,360 "	" 1890 . .	16,051 "		

The following table shows the use of books at Gore Hall in 1893–94 as compared with previous years: —

	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
1. Books lent out . .	65,639	68,892	74,906	70,036	71,434	80,380	82,618
2. Used in the building	15,267	14,299	17,203	15,861	19,648	23,671	22,442
3. Overnight use of reserved books .	20,360	21,802	24,989	21,706	20,469	24,482	25,377
Total (excluding No. 3, which is incl. in No. 1)	80,906	84,191	92,109	85,897	91,082	104,051	105,060
No. of books reserved	6,549	5,848	6,215	6,253	6,397	6,652	7,427

The increasing number of books reserved — of whose hall-use no record is kept — has a tendency to decrease the number of volumes used in the building, of whose use record is made. The establishment of class-room libraries, checks the increase of the figures against the class marked 3 in the above table. It is the observation, however, of those in charge of the reference service, of which no statistics are kept, that it is constantly increasing, year by year, and that the increase for last year was very great.

DELIVERY ROOM COLLECTION.

	1890–91.	1891–92.	1892–93.	1893–94.
Bound Periodicals	3,198	3,198	3,287	3,340
Reference Books	2,348	2,409	2,562	2,704
Totals	5,546	5,607	5,849	6,044

The number of students of the Radcliffe College who have borrowed books during the past seven years is shown in the following table: —

BORROWERS FROM RADCLIFFE COLLEGE.

Years.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
1. Borrowers . . .	66	72	84	82	111	132	108
2. Books borrowed .	1,545	1,531	1,329	930	886	1,057	1,162
3. Reserved books .	301	299	286	284	127	25	132

The figures in the third class are included in class no. 2. Their own collection of 7000 books supplies naturally their main needs.

The following table shows for a series of years the use made of "Admission-Cards," by which students have access to special classes of the books for investigation at the shelves: —

ADMISSION—CARDS.

	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
History . .	68	74	71	81	53	36	41	59	68
Science . .	14	12	14	9	6	8	9	28	27
Art (incl. Music)	16	13	16	24	19	15	13	4	8
Literature .	49	62	54	27	32	38	45	62	63
Classics . .	52	47	42	24	22	18	22	26	45
Philosophy .	9	8	9	16	9	12	16	5	17
Theology . .	12	15	11	6	4	8	9	12	3
Polit. Econ. .	44	64	49	25	13	9	14	9	15
Education .	. .	. .	. .	. .	. .	. .	. .	. .	3
Total students	264	295	266	212	158	144	169	205	249
Times of use	5,820	7,375	7,980	8,390	6,490	2,512	3,629	4,560	5,974

STUDENTS' USE OF THE GORE HALL LIBRARY.

STUDENTS OF	1888–89.		1889–90.		1890–91.		1891–92.		1892–93.		1893–94.	
	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.	Whole No.	No. taking books.
Divinity . . .	26	26	36	36	41	36	39	39	41	37	47	41
Law	217	138	254	151	279	147	363	165	394	161	353	169
Scientific . .	35	21	65	37	88	42	118	71	181	93	280	139
Resident Grad.	85	74	93	81	110	92	176	151	190	157	241	209
Senior Class .	214	206	278	254	289	260	271	251	327	300	323	296
Junior Class .	252	249	244	232	254	242	304	281	328	298	352	320
Sophom. Class	264	238	282	253	289	245	331	274	385	298	394	313
Freshm. Class	309	215	323	215	366	217	381	234	409	254	425	252
Sp. Students .	. . .	. .	144	100	141	123	169	114	149	105	162	116
Totals . .	1402	1167	1719	1359	1857	1404	2152	1580	2404	1703	2577	1855

The percentage of users among the undergraduates during recent years is given in the following table, which shows, however, only such students as were registered at the general delivery desk in Gore Hall, and drew books at that desk: —

	1879–80.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
Seniors	88	90	90	92	96	99	97	91	89	92	91	91
Juniors	83	88	93	96	90	98	99	95	95	92	90	90
Sophomores . .	88	85	86	98	92	94	90	90	84	82	77	79
Freshmen	65	80	80	78	69	77	69	67	59	61	62	59

Eighteen years ago only 57% of all the College students used the Library. In the last year, of the 1656 undergraduates only 359 failed to borrow books, and of this last number, 301 drew out "reserved books," of which no record was made at the General Delivery. This reduces the number of students, who made no recorded use of the library to 58 out of a total of 1656. The libraries of the class rooms and laboratories, as well as those of the students' clubs, provide reading, special as well as general, for a large number of undergraduates, including, very likely, some of the 58 who made no use of Gore Hall.

There is no record of the use made of the 523 periodicals, current numbers of which are on file in the Reading Room, and open to every one's inspection without formality.

BORROWERS REGISTERED AT GORE HALL.

	1891–92.	1892–93.	1893–94.
Students	1,831	1,929	2,104
Instructors	196	160	174
Others	298	362	489
Total	2,325	2,451	2,767

SUNDAY USE.

	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
Days open .	37	37	37	37	37	37	37	37	37
Users . . .	2,842	2,880	2,894	3,024	3,089	3,104	3,284	3,716	3,658
Average . .	76	77	78	81	83	83	88	100	99
Highest no.	108	118	106	108	118	132	119	135	136

Mr. Frank Carney, who has immediate charge of the shelves, reports that 5817 volumes have been permanently placed in the new stack since the last report, making 137,417 so placed out of the volumes constituting the Gore Hall collection. This includes 1544 volumes formerly a part of the library of the late Francis Parkman.

Mr. Carney verified the shelf-lists of the classifications in the stack and adjacent parts in July, showing about 180,000 volumes. The number of volumes which failed to be accounted for was 165, a large increase over last year, and equal to the loss in 1891, when a professional thief made depredations. Of those reported missing in previous years 26 were found in their places, having been silently returned during the year. Of books reported missing since 1883 there are still 598 unaccounted for; 396 having disappeared from the reserved books, and 202 from the stack. Of these 165 unaccounted-for volumes of the year just closed 121 have disappeared from the books of reference, reserved books, and other collections exposed to the handling of all frequenters of the Library, the other 44 having disappeared from the shelves to which only the staff of the Library, officers of the College, and a limited number of other persons have access. In the stack, fewer cases than usual of disarrangement were discovered owing to a supervision of the shelves during the winter, only 124 books being found on wrong shelves.

The following table will show the losses in volumes for twelve years. It should be remembered that these losses only pertain to that portion of the library which has been rearranged and to all new books received since 1877. The rest of the library does not afford records by which an examination can be satisfactorily made: —

LOST BOOKS, 1883–94.

Years.	Reported lost.	Later found.	Now missing, 1894.		
			Reserved.	Stack.	Total.
1883	78	37	17	24	41
1884	51	41	3	7	10
1885	70	34	24	12	36
1886	48	25	9	14	23
1887	35	20	8	7	15
1888	49	29	13	7	20
1889	34	17	12	5	17
1890	93	56	24	13	37
1891	175	28	119	28	147
1892	65	17	25	23	48
1893	53	14	21	18	39
1894	165		121	44	165
Totals .	916	318	396	202	598

This unsatisfactory condition has grown out of various causes: First, as regards the stack, it is open to the entire staff of instruction; to students who hold cards of admission; to the library staff; and to an occasional special investigator. Such an aggregate of frequenters will have an inevitable percentage of careless people, to use no harsher term. Secondly, as regards the reserved and reference books, they are practically open to the handling of any one who chooses to touch them, and offer a field for depredation to any irresponsible person, who places the selfish enjoyment of a book or the pecuniary gain of its possession, higher than honesty, or who finds no convenient opportunity for rectifying acts of aberration or thoughtlessness. The worst feature of the transaction is the despicable disregard of the rights of fellow students, who are thus deprived of the use of such books.

The 318 instances in which books once missing have reappeared are probably of several classes: Clandestine restitutions; undiscovered errors of library assistants in returning books to the shelves, or in renumbering them; accidental binding of two thin books together, or the disappearance unobserved of a thin book within the covers of another. This sort of mistake is very infrequent.

Mr. Tillinghast furnishes the following report of the work of the Catalogue department: —

TITLES CATALOGUED.

	1890–91.	1891–92.	1892–93.	1893–94.
College Library	7,494	9,082	7,969	7,705
Dep't and Class-room Libraries	2,654	2,381	1,772	2,264
Totals	10,148	11,463	9,741	9,969

The work of the past year may be compared with the work of other years as follows: —

Year.	Gore Hall cards prepared.	Titles catalogued for departments.	Volumes received in Gore Hall.
1885–86	32,580	957	6,730
1886–87	29,229	1,021	9,108
1887–88	23,696	1,291	10,885
1888–89	21,256	1,721	9,045
1889–90	24,384	1,438	13,140
1890–91	21,252	2,654	9,606
1891–92	27,167	2,381	9,726
1892–93	23,975	1,772	11,446
1893–94	20,168	2,264	10,326

I append a summary of some points in the more extended report which Mr. Tillinghast has made.

The Catalogue staff was diminished during the year by the loss of Mr. C. K. Bolton (who was appointed to the charge of the Public Library in Brookline) and the withdrawal of three young ladies. The small supply of new books gave the cataloging force an opportunity for bringing up arrears in titles difficult to catalogue, but it told in the number of volumes catalogued for the year. A large number of dissertations were received by exchange with German universities, and these are included in the catalogue work. Two new departments were added to the University Library, namely, the Arnold Arboretum and the class-room library of Romance Literature, whose current accessions for the first time passed through the Catalogue department. Mr. Tillinghast justly says: "That the many and important changes of the past year and a half in the working force of the Library have had no worse effect than the decrease in efficiency of the department most affected — that of classifying for the catalogue — is greatly to the credit of the staff, and testifies forcibly to the loyalty and interest that prevail among the members."

The necessary revisions in all parts of the Catalogue caused the handling of 10,727 cards during the year, in addition to those recently made for current accessions. The number of cards taken from the drawers for this purpose during the last six years have been: 18,717; 11,742; 13,086; 13,628; 12,903; 14,455, which shows that revision to perfect the catalogue is onerous, and steady.

The number of volumes waiting to be catalogued October 1, 1894, was 3450. The present insufficiency of the Catalogue force is going to make it difficult to reduce this number in arrears during the year. The enumeration includes a few volumes of the Gurney gift, a large number of pamphlets of the Lowell gift, most of the large collection on Angling and Fish Culture given by Mr. John Bartlett, some portion of the Parkman library, and a few smaller lots laid aside for work more pressing. The scant space in the Library for handling large gifts of books obliges the staff to work on such gifts in small lots. Any display of them on tables in large masses is prevented by the recurrent arrival of invoices of fresh books which require prompt attention.

A new method of printing the titles for the card catalogue has been put in operation, by which a larger type is used than formerly. To prevent delays a selected compositor in the printing office has given his entire time, with some exceptions, to the library work. The first galley-strip in the new style was printed in February. The custom of not printing titles of books published before 1890, has been abandoned except in the case of books belonging to Department libraries. It is a matter for careful calculation to keep the library's power in producing titles accurately mated with the power to set them in the printing office, so as to render the work of a special compositor economical.

The work of the Ordering department, in the immediate charge of Mr. Potter, is shown in the following statement: —

At the close of the Library year the estimated cost of orders then out (including "continuations," reckoned at $7562) was about $9651, and it was expected that about $5271 of these would come in, to be paid for during the coming year. We have an income for the next year of about $19,650; against this amount must be set off about $8046 (that is: orders out, $5271; periodicals and binding, $2500; freight, $275), leaving a free balance of $11,605. It is further to be considered that some of the items included in our annual book-income are funds with such specific objects that they must be left out of view in providing for general purchases.

FINANCIAL CONDITION (*Gore Hall only*).

	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
Income for books *	$19,881	$16,682	$16,565	$18,824	$18,922	$18,790
Spent	17,347	15,172	13,905	16,566	16,903	15,108
Balance	2,534	1,510	2,660	2,258	2,019	3,682
Appropriation . .	20,050	15,480	11,920	18,700	18,150	none
Unpledg'd balance†	11,238	5,672	9,602	9,501	8,284	5,121

PAYMENTS AND PURCHASES (*Gore Hall only*).

Years.	Income, exclud. balance brought forw'd.	Payments.	Vols. bought.	Vols. of serials added.	Sum of last two columns.
1884–85	$15,094	$16,584	5,932	560	6,492
1885–86	15,332	13,923	3,032	682	3,714
1886–87	17,052	14,549	4,490	746	5,236
1887–88	15,782	16,061	5,389	798	6,187
1888–89	15,799	17,339	4,925	638	5,563
1889–90	15,275	15,137	4,168	838	5,006
1890–91	15,853	13,905	3,230	855	4,085
1891–92	16,491	16,566	4,904	694	5,598
1892–93	16,583	16,903	5,624	841	6,465
1893–94	16,771	15,108	2,932	928	3,860

The figures for income and payments, in the above tables, are taken from the the Treasurer's Report, except those for the last year, which are made up from the library accounts.

Mr. Potter also says: "The payment, $15,108 includes $2783 paid Aug. 1, 1893, for books received the previous year. Deducting $2500 more for periodicals and binding and $225 for freight and duties, we have $9600 spent for books, which sum now nearly corresponds to the value of the 2932 volumes bought. In addition to books there was a large number of maps (508 sheets) and pamphlets (517) paid for out of this expenditure of $15,108."

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* The items of income include unexpended balances of the previous year.

† What is called "unpledged balance" is income free from obligations for serials and outstanding orders.

ESTIMATED AMOUNT IN DOLLARS OF ORDERS SENT TO PRINCIPAL AGENTS (*Gore Hall only*).

	1886–87.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
American . .	987	1,300	1,200	895	724	2,157	1,488	1,055
English . . .	2,380	2,150	2,500	2,043	1,334	2,844	2,532	1,085
French . . .	1,282	1,035	910	1,284	585	1,437	1,144	544
German . . .	2,170	1,950	2,450	1,401	1,139	3,204	3,537	1,072
Italian . . .	225	112	325	200	111	717	448	138
Scandinavian.	21	56	106	52	50	78	81	59
Spanish . . .	. .	. .	. .	. .	. .	69	158	15

The division among agents gives only an approximate representation of division by languages, since books in all languages may be bought in London, as Spanish and South American books usually have been, and Slavic books are mainly bought through the German agency. We usually buy more titles in German than in any other language.

TABULATION OF ORDERS (*University Library*).

Order slips on hand October 1.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Book orders out . . .	2,112	2,875	1,242	2,350	2,658	1,423	686
Continuation orders out	1,951	2,163	2,272	2,400	2,539	2,789	3,078
Total active orders .	4,063	5,038	3,514	4,750	5,197	4,212	3,764
Cancelled orders. . .	6,800	7,200	7,675	8,600	9,200	9,900	10,400
Deferred orders . . .	541	533	1,158	942	984	668	1,227
Countermanded orders	. .	. .	1,273	. .	. .	795	1,160
Grand total	11,604*	12,977*	13,930*	14,292	15,381	15,575	16,551

Mr. Potter reports: "The year opened with a large amount of orders out and a poor financial showing. On Oct. 2 all orders prior to Aug. 1, 1892, were countermanded of Kegan Paul, Harrassowitz and Reinwald. When it appeared that the interest of the specially invested Minot Fund ($4200 annually) might not be paid, all orders out except continuations were countermanded of all our European agents and of Littlefield in this country."

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* Including some items now embodied in cancelled orders.

The Council met on February 2, approved this action and made no appropriations. When the January interest on the Minot Fund was received, and prospects seemed brighter in the spring, ordering was resumed on June 1 to three-fourths of the normal amount, and a number of deferred and countermanded orders were sent forward.

The estimated cost of continuations, which is a fixed liability for our book funds, — though only about one-half of the charges is likely to be actually incurred each year, owing to the irregularity of such serials, — has been growing rapidly of late years, as will be perceived from the following table: —

Year.	Estimated cost of continuations.	Total estimated cost, books and serials.	Continuations.
1880–81	$2,008	. . .	. .
1881–82	3,336	$12,345	. .
1882–83	4,567	15,956	. .
1883–84	4,821	20,495	1,422
1884–85	4,828	17,764	1,536
1885–86	5,163	14,228	1,637
1886–87	5,102	14,375	1,819
1887–88	5,770	14,855	1,951
1888–89	6,079	16,104	2,163
1889–90	6,191	17,186	2,272
1890–91	6,406	11,124	2,400
1891–92	6,732	19,318	2,539
1892–93	6,650	19,290	2,789
1893–94	7,562	13,220	3,078

It needs to be stated respecting the last column that it includes continuations for class-room and other libraries, while the figures for the other columns make no account of the cost of such. These class-room serials have not been of any extent till recently.

Mr. Potter adds: "The percentage of continuations on which nothing has been received during the year is nearly 67% from all agents. I have in practice allowed for about one half to come in."

Our three principal foreign agents, in London, Leipzig, and Paris, procured for us books in the following proportions to their orders: Kegan Paul, 81%, Harrassowitz, 80%; Reinwald, 79%. We received during the year 8 English shipments, 9 German, 5 French, 5 Italian, and 2 Scandinavian.

The following table shows the number of books recommended to be bought for the University Library, the number of these already in the Library; the number ordered (including those reordered), and of these last the number for which there was reason for haste in transmitting the order:—

Purchases and Gifts.	1888–89.	1889–90.	1890–91.	1891–92.	1892–93.	1893–94.
Titles, Recommendations	4,904	4,404	4,545	4,326	5,396	3,575
In the Library	1,347	819	711	953	1,334	745
Ordered	3,056	2,505	4,863	3,598	3,744	2,192
In haste	165	128	122	197	220	200
Gifts in books and pam's .	9,815	12,673	9,992	5,566	17,888	22,624

It must be understood that the figures in a column have no relation to other figures in the same columns, for books may be recommended in one year and ordered in the following year, etc.

Mr. John H. Storer, Curator of Coins, reports that the collection is now arranged and ready for labelling.

Mr. Walter B. Briggs, who has had temporary charge of the map department, reports as follows:—

"There have been added to the map collection, since the count given in the report of 1891, 21 roller maps; 35 atlases; to the portfolio collection, 542 titles, embracing 2912 sheets, about 50 of which are duplicates. In this count of 2912 are the 632 sheets so far published by the United States Geological Survey; the 655 sheets of the yet unfinished government topographical survey of Austria-Hungary (including Bosnia); the 440 sheets of the government survey of Germany; and the 156 sheets of Saxony.

This also includes the 89 maps received in January, 1894, by the bequest of Francis Parkman. These maps (with a few other engravings) were used by Mr. Parkman in his historical studies and have been arranged in 7 portfolios, according to their subjects, as follows:

1. *Maps relating to Lakes Champlain and George. 13 sheets.*

4 U. S. Coast Survey maps of Lake Champlain, 1876 and 1879.

Topographical Sketch of Lake George, by A. F. Dalson, 1855.

The region of Lake George from the surveys made in 1762. (A tracing.)

Ticonderoga and its dependencies, Aug., 1776, from a plan drawn by Col. John Trumbull.

Sketch of the country round Tyconderoga, drawn by L^{t} E. Meyer of y^{e} 60th Reg^{t}. (Manuscript.)

Siege of Fort William Henry, 1757. (Tracing.)

Fort William Henry, with the attacks of the French, 1757. (Copied from the original sketch in American Military Plans: Maps; Vol. IV. in the N. Y. State Library.)

Map of Lake George and vicinity from surveys made by F. W. Beers. Published by J. B. Beers & Co., New York.

Plattsburgh and Cumberland Bay, Lake Champlain. U. S. Coast Survey, 1873.

Burlington, Vermont. U. S. Coast Survey, 1872.

2. *Maps relating to the Gulf of Mexico. 11 sheets.*

8 U. S. Coast Survey maps.

Carte de la Nouvelle France, pour servir à l'Étude de l'Histoire du Canada depuis sa Découverte, Jusqu'en 1760, par P. M. A. Genest. 2 sheets.

Map of the Territory of Minnesota, exhibiting the route of the expedition to the Red River of the north, in the summer of 1849, by Capt. John Pope.

Hydrographical basin of the Upper Mississipi river, from observations by J. N. Nicollet, 1836–40. Reduced and compiled by Liet. W. H. Emory, 1843.

3. *U. S. Coast Survey. Gulf of Mexico. 18 sheets.*

18 Coast Survey maps used by Mr. Parkman in studying the experiences of La Salle along the Gulf coast.

4. *St. Lawrence River. Attacks on Quebec by Phips and Wolfe, 1690 and 1759. 11 sheets, 1 plate.*

Chart of the St. Lawrence and Saguenay Rivers, by Paul Cousin. Montreal, 1873.

Surveys of the principal rapids of the River St. Lawrence between Prescott and Lake St. Louis, made under the instructions of the Commissioners of Public Works by Messrs. Maillefert and Raasloff. Toronto, 1856. 4 sheets.

Quebec, ville de l'Amérique Septentrionale dans la Nouvelle France, etc. Paris, 1694. H. v. Loon.

Quebec, colored manuscript copy of the same period as preceding.

Plan de Québec, et ses environs, en la Nouvelle France. Assiegé par les Anglois le 16 l'Octobre, 1690, jusqu'au 22, etc., par M. ʸ Le Comte de Frontenac, gouverneur general du Pays. (Colored manuscript.)

Plan du Bassin de Québec, et ses environs, par N. B [ellin] Ingénieur de la Marine. 1744.

Plan of the City of Quebec, drawn and compiled from original plans by A. Larue. Quebec, 1842.

Portrait of General James Wolfe. Commander-in-Chief of his Majesty's Forces on the Expedition against Quebec. London, printed for Robt. Sayer.

Plan of the Military and Naval Operations under the command of the immortal Wolfe and Vice-Admiral Saunders before Quebec. Alfred Hawkins, Quebec, 1841. (Tracing from the preceding.)

5. North America and Canada, illustrating the French and Indian Wars, and Sullivan's Campaign, 1779. 23 sheets.

Portrait of F. X. Garneau, Historien du Canada. 1866.

Il Desegno del discoperto della nova Franza, etc. Zaltièri, 1566.

Fac-simile of part of the Champlain Map of 1632.

Carte de la Nouvelle France et de la Louisiane. Perè Louis Hennepin, 1683.

Carte particulière du Fleuve Saint Louis.

Map of the Western parts of the Colony of Virginia as far as the Mississippi.

Carte des frontières Françoises, et Angloises dans le Canada depuis Montreal jusques au Fort du Quesne.

Political map of the Northern division of the United States. Wm. Woodbridge, 1843.

Map of Canada, East and West. Published by Ensign, Bridgman & Fanning. New York, 1855.

Reduced copy of the Government map of Canada. Compiled by Thomas Devine, 1861.

Map of the Province of Canada from Lake Superior to the Gulf of St. Lawrence, corrected by the Geological Survey. Montreal [1855?].

Map of Wayne County [Michigan].

Map of the County of Simcoe [Ontario]. Compiled and published by John Dickinson of Barrie, 1878.

Plan of the City of Albany and of Fort Fredrick at Albany.

Outline of the Mohawk River and Wood Creek, shewing the relative positions of Fort Bull, Fort Williams, and the German Flatts.

3 Tracings of region around Seneca Lake in Northern New York, copied from "The Route of the Western Army, 1779," in the N. N. Hist. Soc. Library.

Map of Niagara Falls and vicinity and Map of Niagara River and parts adjacent, by H. A. Parsons.

Engraving of Johnson Hall, the seat of Sir William Johnson.

2 Water-colors of scenes on the Niagara River.

Water-color of an unknown town.

6. Maps of Acadia and Louisbourg. 7 sheets.

Carte de l'Acadie, et des pays compris entre la Rivière Pentagouet, le Cap Breton et la grande Rivière à Saint Laurens, 1672. (Fac-simile from Denys, Description Geographique, etc., 1672.)

A new map of Nova Scotia and Cape Britain, with the adjacent parts of New England and Canada. T. Jefferys: London, 1755.

Acadia, with adjacent islands. 1755, (A tracing.)

Port de Louisbourg dans l'Isle Royale.

Siege of Louisbourg. 1758. (A tracing.)

Plan du Port Royal dans l'Accadie par N. B [ellin] Ing. de la M. 1744.

A large and particular plan of Shegnekto Bay, and the circumjacent country. T. Jefferys. 1755.

7. *Maps of Braddock's Defeat, 1755; Bouquet's Campaign, 1764; and of Boston in N. England during the periods of the French Wars.*

11 maps, 1 plate.

Plan of Fort du Quesne, now Pittsburgh, as it was, before it was demolished, 1758. (A tracing.)

4 Sketches of the field of battle of the 9th of July [1755], upon the Monongahela, seven miles from Fort Du Quesne, showing the disposition of the troops. (Tracings.)

Disposition of the Penn^a troops in the Western District, for the winter season (endorsed 1764) (from the Harrisburg Archives). (A tracing.)

A map of the country on the Ohio and Muskingum Rivers shewing the Indian towns, etc. T. Hutchins. (Fac-simile.)

Carte de la ville, baye, et environs de Baston [Boston], par Franquelin, 1693. (Photographic reproduction.)

An enlarged photographic reproduction of the town of "Baston," from the preceding.

The town of Boston in New England, by Capt. John Bonner. Boston, 1722. Engraved and publ. by G. G. Smith, Boston, 1835.

Plan of Boston in New England. Will. Burgiss, 1729, Originally engraved by Thos. Johnson, 1729. Reproduced in 1869.

A View of the City of Boston, the Capital of New England, in North America. Drawn on the spot by his Excellency, Governor Pownal. (Engraving.)"

What I have repeatedly said about the insufficiency of Gore Hall, for the uses of the Library, I can only repeat with renewed emphasis: "I have exhausted the language of warning and anxiety, in representing the totally inadequate accommodations for books and readers which Gore Hall affords. Each twelve months brings us nearer to a chaotic condition. The Library goes on with its natural accessions, and friends of learning give us the means to add more and more to our growth. We have as yet no assurance to give them that their gifts can be properly cared for and the use of their books properly regulated for the general good."

During the year (in March and April) we found it necessary to box up 15,000 volumes and store them beyond reach, in order to make room for new accessions, believed to be of larger present interest.

In selecting these books to be put aside, the records of circulation were examined to lead us to the choice of those in least demand. The removal, however, was no sooner made than complaints began to come in of the deprivations which by this act were imposed on the frequenters of the Library. This is a sufficient answer, if one be needed, to the unreasoning demand, sometimes made of large libraries, that their shelves shall be thinned out by discarding useless books. Every librarian of large experience knows that there are no such books. A University library, which is the leading one in the country, needs above all others, to answer every bibliographical inquiry, by producing the book. Merit is but one test of the value of a book to a large library.

I close with a statement made to me by Mr. Kiernan, whose opportunities for close observation on the matter are of the best: —

"The unsatisfactory condition of the Library continues, and calls for immediate relief. The reading-room is daily overcrowded, is badly ventilated, imperfectly lighted, and generally unfitted for its purposes. The limited space in the delivery-room does not allow a free use of the card-catalogue, thereby causing much delay to the student seeking books. The condition of the shelves is fast becoming chaotic. In the stack the classified books have overrun their limits, and it is necessary in many cases to place the continuation of a subject on distant shelves where room can be found. The books not classified, comprising about one-half of the Library, are scattered from the basement of the reading-room to the sixth floor of the stack; and about 15,000 volumes stored in the cellar of Appleton chapel are totally inaccessible. The variety of book and shelf numbers (of which there are about forty) increases the danger of misplacement, and hinders seriously the prompt finding of books. The want of light in the reading-room and stack during the period of short days compresses the work of the Library into a few hours, and is a serious obstacle to a student having recitations several hours of the day, as it leaves but a limited time for library work. The present methods of instruction require a certain amount of reading to be done by students, and many of the books needed for this work can only be found in the College Library. It seems reasonable, if such work is expected, that suitable facilities should be afforded students for doing it. The use of the Library in Gore Hall has more than doubled in the last five years, notwithstanding that the class-room and laboratory libraries containing 10,000 volumes have been opened to readers. As this increase will probably continue, some means should be taken to meet it."

JUSTIN WINSOR, *Librarian.*

NOVEMBER 7, 1894.

THE HERBARIUM.

To the President of the University:

Sir, — During the past year the most important accessions to the Gray Herbarium by gift or exchange have been as follows: from Mr. John Donnell Smith of Baltimore, 758 specimens of plants from Guatemala, a set of much value, collected and determined at great personal expense and containing many new and rare species; from Professor John Macoun, Canadian Naturalist, and Mr. J. M. Macoun, Curator of the Government Herbarium at Ottawa, 337 flowering plants and ferns collected in British America upon the Natural History Survey; from Mr. F. V. Coville, Chief Botanist of the Department of Agriculture at Washington, a set of specimens collected upon the Death Valley Exploring Expedition in Southern California, a set of 370 plants of Nebraska and 222 plants of South Dakota collected by P. A. Rydberg, also 66 plants of Western Mexico collected by Dr. Edward Palmer; from Professor C. V. Piper, 150 plants from the State of Washington; from Mrs. F. P. Shepard, 280 plants of Turkey in Asia; from Professor J. W. Moll of Groningen, Holland, a set of 61 Papaveraceæ; from Professor N. L. Britton of Columbia College, a valuable set of specimens of the difficult genus *Lechea;* and from Mr. W. C. Werner, 120 plants of Ohio. The chief acquisitions by purchase have been the following: from Mr. A. A. Heller, 441 plants of Virginia; from B. F. Bush, Esq., 350 plants of Missouri, both of these sets containing a number of additions to the range of Dr. Gray's Manual; from Mr. J. K. Small, 172 plants from the mountains of Georgia; from the Canadian Natural History Survey, 150 mosses and lichens of British America; from Mr. M. L. Fernald, 430 plants of Northern Maine. The principal collections, which have been received for identification and have formed the material for the greater part of the determinative work of the year, have been as follows: (1) The flowering plants and vascular cryptogams secured upon the Archæological Exploring Expedition to Northern Mexico under the direction of Dr. Carl Lumholtz. This collection, made in the less explored parts of Sonora and Chihuahua by Messrs. C. V. Hartman and C. E. Lloyd, botanists of the expedition, comprised 2894 specimens, among which were 23 new species and varieties. (2) The plants collected in Central and Southern Mexico by Mr. C. G. Pringle, numbering 371 specimens, representing exclusively the rarer plants of the region and containing about 60 new species and varieties. (3) The plants collected on the Galapagos Islands by Prof. G. Baur of the University of Chicago, numbering 573 specimens. (4) A collection of 100 plants from the neighborhood of Guanajuato prepared by Professor Alfred Dugès, and 73 Mexican plants from Mrs. D. H. Sheldon. (5) A collection of 300 plants gathered by the Curator chiefly in the mountains of North Carolina during the summer of 1893.

The entire number of plants received from September 1st, 1893, to September 1st, 1894, was 8787. The number of sheets of mounted plants added to the organized collection of the Gray Herbarium has been 9075. The number of volumes added to the Library has been 231 and of pamphlets 241.

January 1st, 1894, the services of Mr. J. M. Greenman, A.B., were secured as assistant. Mr. Greenman is a graduate of the University of Pennsylvania and was occupying the position of assistant in botany at that institution. Since coming to the Gray Herbarium he has been chiefly engaged in studying the Mexican collections of Mr. Pringle and the Galapagos plants of Professor Baur. At the beginning of the year Mr. Pringle was reappointed botanical collector for the Herbarium and Botanical Museum, and since April he has been exploring with two assistants the wilder parts of Mexico, especially the State of Oaxaca, reputed botanically the richest of the country. Although the Indians in the mountains have shown themselves unfriendly and caused considerable inconvenience and anxiety, the season and locality have proved so exceptionally favorable that Mr. Pringle reports the most successful year of his Mexican collecting.

During July and August the Curator accompanied by Mr. Hermann Schrenk make a six weeks' collecting trip to Newfoundland, which is botanically one of the least explored regions of temperate North America. Through much kindness on the part of Messrs. W. D. and H. D. Reid, contractors for the Newfoundland Northern and Western Railway, the Curator and his assistant were taken to the headquarters of railway construction in the valley of the Exploits River, and there hospitably entertained during their exploration of the surrounding country. The region thus reached by the new railway was about forty miles from the coast, being entirely uninhabited and never before explored botanically. The weather, although always damp on the island, did not prove an insurmountable obstacle in the drying of specimens, and very large collections, amounting to more than 7000 specimens, were secured. As these plants were not received at the Gray Herbarium until after September 1st, a more formal record of them may be deferred until the next report. During the summer Mr. M. L. Fernald, assistant, made some further exploration of Northern Maine, securing a number of plants which considerably extend the range of the species as hitherto known.

Early in the academic year it became evident that more case-room would be necessary to allow for the normal growth of the organized herbarium; and to supply this need the room to the right of the entry was fitted with cases and the whole herbarium so redistributed as to relieve all pressure for the present. The books hitherto shelved in this room have been transferred to the small room next the laboratory, some needful alterations having been made to render it as nearly fire-proof as possible.

In every large herbarium there is a constant accumulation of such specimens as cones, acorns, or samples of wood and bark, which on account of their thickness cannot be mounted upon sheets of card-board and filed in the usual cases. At the Gray Herbarium this collection, which has been accumulating for years and is kept in one of the rooms upon the second story, had through rapid growth and insufficient case-room become crowded and somewhat disordered. During the spring it was carefully resorted, the duplicate material removed for the Botanical Museum, and the remaining parts put into systematic order and more completely labelled. Finally, to render the collection more easily accessible, a card-catalogue of the specimens has been prepared indicating the case and drawer where each is to be found. In the library the much-needed card-catalogue of books and pamphlets is approaching completion. Many of the more important pamphlets have been bound, and the remainder provided with uniform cases and rendered much more convenient for consultation.

Throughout the year the Curator has devoted all available time to the continuation of the manuscript of the "Synoptical Flora," completing the revision of the *Alsineæ* and making considerable headway upon the *Cruciferæ*, which have formed the largest lacunæ in Dr. Gray's manuscript of the first volume which covers most of the orders from the *Ranunculaceæ* to the *Leguminosæ*.

It is a pleasure on behalf of the staff of the Gray Herbarium again to express sincere gratitude to the members of the Visiting Committee for their liberality in gifts for present use. Without this assistance it would not only have been impossible to make much progress in research, but very difficult to maintain the steady growth of the collections so necessary to secure completeness in times of rapid exploration and great botanical activity throughout the country. Through Dr. Goodale, Chairman of the Botanical Department, the Herbarium received in April a generous gift of $2500 from an anonymous friend, to whom the staff would express its cordial appreciation and gratitude. With the gift came the very excellent suggestion that it should be used in part to secure for the library a more complete representation of all the important botanical periodic publications. In accordance with this suggestion the list of subscriptions to scientific journals, and the memoirs and proceedings of learned societies has been considerably augmented and a number of important sets of such works secured which could not otherwise have been purchased.

The publications of the Gray Herbarium during the year have been as follows: —

Contribution VI. (of the new series). By B. L. Robinson. Including I., The North American *Alsineæ*; II., Descriptions of New and hitherto Imperfectly Known Plants contained in C. G. Pringle's Mexican Collections of 1892 and 1893; III., Notes on the Genus Galinsoga; IV., Miscellaneous Notes and New Species. Proc. Am. Acad. xxix. 273.

Contribution VII. By B. L. Robinson and J. M. Greenman. Further New and Imperfectly Known Plants collected in Mexico by C. G. Pringle in the summer of 1893. Ibid, xxix. 382.

Contribution VIII. By B. L. Robinson and M. L. Fernald. New Plants collected by Messrs. C. V. Hartman and C. E. Lloyd upon an Archæological Expedition to Northwestern Mexico under the direction of Dr. Carl Lumholtz. Ibid. xxx. 114.

Notes from the Gray Herbarium. By M. L. Fernald. Zoe, iv. 379.

Northwestern Notes. By M. L. Fernald. Bot. Gaz. xix. 335.

B. L. ROBINSON, *Curator*.

NOVEMBER 6, 1894.

THE BOTANIC GARDEN.

To the President of the University:

Sir: — As Director of the Botanic Garden, I have the honor to present my report for the academic year, 1893–94: —

With the exception of the protracted drought of the summer the weather has been generally favorable to the plants now cultivated in the open air in our garden. The spring was regarded as unusually favorable for all our seedlings and they became well established before the drought came on.

Owing to the dry weather in the late summer the amount of water used from the city supply far exceeded that of any previous year, but it was not found necessary at any time to make use of the water from our driven well. It is probable that the effects of the drought will be shown next season, but arrangements have already been made by which our possible losses can promptly be made good.

Since our garden is used by the public, by our elementary students, and by those in our advanced classes, it is necessary to keep proper ratios between the species of plants which are most important for each. In revising these ratios it has not been found necessary or even advisable to disturb that which has heretofore existed between the native and foreign species. This ratio has been found by long experience the best for the purposes of the garden.

An accurate census made during the early part of the summer by Mr. J. W. Blankinship showed that we were then cultivating out-of-doors more than 2800 species, together with 400 varieties. These species were distributed as follows: American, 1500; Foreign, 1300. Of the latter, about 800 are from Europe and western Asia, and the remainder from Japan and eastern China. All of the foreign plants are selected with special reference to the illustration of some morphological and structural features.

A census of the plants in our range of greenhouses gave the total number of species, including varieties, as 2400, thus carrying the total number of species under cultivation somewhat above the limit which was suggested by the Committee of the Overseers as best suited to our means and space. The number of American species now possessed by us is larger than could be reasonably expected under the circumstances. Nearly all the important orders are well represented.

Labelling. — It is well known to all who are familiar with botanic gardens that the problem of labels is the most serious which can confront the management. Labels can be so easily misplaced through accident, that the labelling of the plants is a discouraging task. Early in the college year arrangements were made through the employment of a skilful letterer to have the requisite number of labels for our plants prepared by early spring, and thus renew the efforts of previous years to have every plant labelled. By the hearty coöperation of the officers of the Gray Herbarium, and the assiduous efforts of the nomenclator, Mr. Blankinship, this work has been carried out successfully. All our plants in the formal beds, and all our decorative plants on and under the terrace have been accurately labelled.

The Botanic Garden is of great use as an adjunct of the Herbarium. It is gratifying to be able to report that the Curator of the Herbarium and his assistants have found that the management of our garden has been of use to them. The seeds of rare species have been raised, and such plants as cannot be readily preserved on the shelves of an herbarium have been carefully cultivated for their inspection. The Curator and his staff report that they have had the willing aid of the head gardener and his assistants. It is equally gratifying to be able to report that the officers of the Garden have found the members of the Herbarium staff always ready to give assistance in regard to nomenclature. The relations which exist between the Herbarium and Garden have been and still are of a satisfactory character, and nothing has occurred at any time to disturb them.

The number of visitors to our garden shows a slight but steady increase. On pleasant days the number has been found much larger than in previous years. The visitors are particularly attracted by the groups of tropical and Australasian plants which are placed near the large rockery under the maples, from July to September inclusive. The new varieties of decorative plants, which possess an horticultural as well as a botanical interest, have added much to the pleasure of the visitors. It has been observed this year that the garden has been visited by a larger number of students than formerly and that some of these, while not members of botanical classes, have displayed an intelligent interest in the specimens cultivated. The botanical students have made much more use of the garden than ever before.

As in former years the material raised at the garden has answered amply for the needs of the more advanced classes. The Summer School of Botany has been supplied with copious illustrations for the study of systematic and morphological botany. Three series of investigations have been carried on by advanced students, the results of which are ready for publication. The very large elementary class cannot be provided with sufficient material from our greenhouses; and it has been found necessary to continue the satisfactory arrangement with the instructor in horticulture at the Bussey Institution for the constant supply of flowers in late winter and early spring. Mr. Watson has spared no pains in providing our class with the specimens needed. He has also been of great service in conducting our importations of bulbs and bulbous roots in the autumn.

There has been so much interest shown in botany in the Cambridge and Boston public schools that the Director has felt justified in supplying during early summer such material as could be spared from our garden to the teachers and pupils. He is satisfied that this policy is sound.

The number of students in the different classes in botany may be given as follows: —

Botany 1, Professor Goodale and Mr. Jones	170
Botany 2, Professor Thaxter and Mr. Richards	49
Botany 3, Professor Goodale and Mr. Jones	19
Botany 4, Professor Farlow and Professor Thaxter	17
Botany 20*a*, Professor Goodale and Mr. Jones	12
Botany 20*b*, Professor Farlow and Professor Thaxter	10
Summer-class, Mr. Jones	23

Summer School. — The summer course in botany was held at the Botanic Garden from June 28 to August 1. It was under the instruction of Mr. Herbert L. Jones, assisted by Mr. B. M. Duggar. The course consisted of laboratory work on the morphology and structure of the higher plants. The laboratory work was supplemented by lectures on Vegetable Morphology, Physiology, and the Principles of Classification. All the resources of the Botanic Garden, the Botanical Laboratory and Library were at the disposal of the students. Frequent excursions were made to localities of special botanical interest. Those in attendance were for the most part teachers of botany, with more or less previous training. Twenty-three completed the course of five weeks.

Teacher's Course. — During the latter part of the winter and the spring there was conducted in the Botanical Museum a course of lectures for Cambridge teachers. The instruction comprised the general morphology of flowering plants. The lectures were given on Saturday mornings and were supplemented by laboratory practice continuing through the forenoon. The course was attended by seventy teachers from the primary and grammar schools. The class was divided into six sections, each under the charge of a trained assistant, so that each had an opportunity to receive personal instruction. The fees paid by these teachers, supplemented by a small subvention from the College, were used in remunerating the assistants and in providing material. The only objection to the course was the serious draft it made upon the rooms at the disposal of the department. Unless other quarters can be provided for the purpose, it is not recommended that the course be hereafter given.

Laboratories. — Some slight changes, especially in equipment, have been made during the year. A large room on the first floor has been fitted with cases for the use of students of economic botany and has proved well adapted for this purpose. Much of the apparatus used in the laboratory for histology and physiology perishes in using. It will be necessary to replace a considerable part of our appliances which have deteriorated during the last four years.

The Library has been much improved in arrangement and considerable additions have been made, but it still falls far short of the demands made upon it.

Museum. — Notwithstanding the depressed financial condition of the country, it was decided early in the year to prosecute the work of preparing and arranging the specimens which illustrate economic botany and biology. In furtherance of this plan one of the larger rooms has been fitted with cases in which there are now stored and accurately arranged more than 5000 species. There remain unarranged and accurately determined about half as many more which we hope to put in place during the coming winter. For the public exhibition of selected suites large cases have been constructed in the hall which opens into the Ware exhibition room. In these new cases it will be possible to illustrate all the types of economic plants.

The possession of the Blaschka glass models of flowers justifies us in widening the scope of our morphological museum. We have now on exhibition about 500 specimens, which illustrate nearly all the great orders and important genera of flowering plants, arranged systematically to display their affinities. These collections are to be supplemented presently by suites which will illustrate, as far as possible, the relations of plants to our common insects, especially those of a destructive nature. As is fitting, these collections are to be placed in the room next to the Zoölogical Section, thus showing some of the relations between the two kingdoms of plants and animals. The Director of the Museum of Comparative Zoölogy has generously placed at our disposal for exhibition selected specimens from the department of entomology, which are to be exhibited in the same cases as the glass models of species which they particularly affect.

The Director has the pleasure of announcing some generous gifts. Miss Anna C. Lowell has given towards the Lowell fund for the

Botanic Garden, $1000. A graduate of the College, who has previously given most generously to the botanical department, placed at the disposal of the department $10,000 for present use. A portion of this was at once transferred to the Herbarium which stood sorely in need of funds for completing its series of periodicals. The remainder was divided between the Botanic Garden and the Museum. This timely gift has prepared us to carry out well-matured plans which would otherwise have waited long for their fulfilment.

There is now needed for the work of the department an increase of its income of at least $5000 annually.

The relations which exist between our Botanic Garden and Museum and other Botanic Gardens and Museums are of the most friendly character.

From the Overseers' Committee on Botanic Garden the Director has received much valuable assistance during the year. Many of the members of the committee are practical horticulturists, who understand the needs of such an institution as ours, and they second generously all the efforts of the Director towards its improvement.

GEORGE LINCOLN GOODALE, *Director.*

THE ARNOLD ARBORETUM.

To the President of the University:

Dear Sir: — I have the honor to submit the following report on the condition and progress of the Arnold Arboretum during the year ending July 31st, 1894:

Two courses of instruction in dendrology were given by Mr. J. G. Jack whose lectures were supplemented by excursions of three or four hours in the woods, plantations and nurseries. The first course was given in September and November, with an average attendance of twenty-four, and the second in May and June, with an average attendance of forty. These classes are composed largely of teachers who often follow them from year to year. One special student studied in the Arboretum during the winter and spring months with a view of fitting himself to become a practical forester.

The number of people who visit the Arboretum from curiosity, to enjoy its silvan beauties, or to avail themselves of the opportunity to study its collections, appears to be increasing rapidly and its educational value as a great object lesson must already be considerable.

The most important work begun during the year has been the rearrangement of the shrub collection. This was first brought together ten years ago, when it was planted provisionally for purposes of study in thirty-seven beds, each seven feet wide, with a total length of 8325 feet; the collection has increased rapidly and had long ago outgrown its quarters. The construction of the parkway by the city of Boston along the eastern boundary of the Arboretum and the Forest Hill entrance into the Arboretum from the parkway has made it possible to extend and rearrange this collection, which will now occupy fifteen beds, each eleven feet wide, with a total length of 8330 feet, and an area of 33,320 square feet more than the others. This change necessitates lifting every plant and regrading the beds. Two beds and three half-beds were made in the autumn and planted in the spring, and the remaining beds will be made and planted during the coming year.

Trees in the Magnolia, Rue, Linden, Melia, Sumach and Rose families have been planted in the systematically arranged tree-collection and the space devoted to these groups is now practically filled. The ground surrounding the Museum has been graded and converted into a shrubbery, about 25,000 plants having been used during the year for this purpose and to extend the shrubberies bordering the drives.

The collections and the trees in the natural woods are in a healthy condition and, on the whole, have made satisfactory progress during the year in spite of the extraordinary drought of the spring and summer.

The interchange of plants and seeds with other botanical and horticultural establishments has been continued during the year. There have been 12,555 plants (including cuttings and grafts) and 1080 packets of seeds distributed as follows: To the United States and Canada, 11,601 plants and 245 packets of seeds; to Great Britain, 787 plants and 271 packets of seeds; to the continent of Europe, 167 plants and 381 packets of seeds; to Japan, 183 packets of seeds. There have been received during the year 5243 plants (including cuttings and grafts) and 431 packets of seeds from 51 donors.

There have been added to the Herbarium 1301 sheets of dried woody plants during the year, including a collection of Bolivian plants from Professor H. H. Rusby of the College of Pharmacy, New York; Arizona plants from Professor J. W. Toumey of the University of Arizona; plants of Lower California from Mr. T. S. Brandegee of San Diego; Apalachian plants from Mr. J. K. Small of New York; California plants from the California Academy of Natural Science, and a set of plants from the valley of the Amour River, communicated by the director of the Imperial Botanic Garden of St. Petersburg.

The Library has received by gift 350 bound volumes and a number of pamphlets. During the year the fifth and sixth volumes of "The Silva of North America," prepared in the Arboretum, and fifty-two numbers of "Garden and Forest," have been published.

C. S. SARGENT, *Director.*

THE CHEMICAL LABORATORY.

To the President of the University:

Sir, — In the summer just ended the Chemical Laboratory has suffered its most serious loss in the death, on September third, of Josiah Parsons Cooke, the director of the Laboratory from the time when that office was established in 1879, and before that the head of the Chemical Department since he introduced into the College in 1851 the teaching of chemistry by experiment. To his wise foresight and persistent care is due in great measure the present flourishing condition of this department of the University.

There were no important changes in the teachers, courses of instruction, or arrangement of the laboratories during the past year, but there was a very great increase in the number of students taking chemical courses, as will be seen from the statistics given in the Report of the Dean of the Faculty of Arts and Sciences, and this increase was not confined to the elementary electives, but the number of students who devoted part or the whole of their time to work on research was larger than ever before, amounting to nineteen, of whom seven studied inorganic and twelve organic chemistry. As a result, all the laboratories for research were more than full, and the large laboratory for descriptive chemistry overflowed into another room. An increase no greater than is to be expected will in a few years necessitate the fitting up of a new room as a laboratory, or the refusal to teach part of those who wish chemical instruction. With the large number of advanced students it is not surprising that but little original work was accomplished by any of the teachers alone, but this loss was more than made up by the amount of work carried on by them in conjunction with students.

The students of Professor Jackson have been engaged in the following work: — H. S. Grindley has continued his work on acetals and hemiacetals derived from chloranil, and, beside establishing the constitution of these bodies, has obtained derivatives from them in which an atom of oxygen spans the benzol ring. S. Calvert has finished his researches on the removal of bromine from aromatic compounds by tin and hydrochloric acid, and on the behavior of benzol derivatives containing halogens. F. B. Gallivan has studied certain derivatives of unsymmetrical tribrombenzol. C. A. Soch has prepared picrylmalonic ester, a substance which Dittrich stated he was unable to obtain by the method used. R. D. Young has studied addition compounds similar to those made from picric acid.

The following work was carried on under the direction of Professor Hill: — J. A. Widtsoe studied the action of hydroxylamine upon mucophenoxychloric and mucophenoxybromic acids and their methyl esters, in order to determine whether the difference in the behavior of mucobromic acid and its methyl ester, which had been proved by R. W. Cornelison, existed in other cases. F. L. Dunlap began the study of the product formed from mucochloryl chloride by the action of benzol and aluminic chloride. H. E. Sawyer continued the study of methylpyromucic acid began by W. L. Jennings. He converted the methylpyromucic acid through the aldehyd acid into dehydromucic acid, thus definitely establishing the relation between these two substances. J. Torrey, Jr., took up again the study of the compounds obtained from mucobromic acid by the action of potassic nitrite, which were partially investigated in this laboratory many years ago. H. A. Torrey studied the changes which tetrabromfurfurane undergoes when exposed to the sunlight. Oxygen is absorbed and dibrommaleicbromide is formed in large quantity. Dr. E. T. Allen undertook the study of the fumaric aldehyd acid of Limpricht. This investigation is not yet completed, but he has shown that one of the products formed under the conditions described by Limpricht is the brommaleic aldehyd acid. R. H. Forbes studied the action of the tribromide and pentabromide of phosphorus on tartaric acid.

Dr. Richards has continued his work on the atomic weight of strontium, finishing the part relating to the analysis of strontic bromide, which yielded the number 87.66. The following work was done by students under his direction. E. F. Rogers has made a careful revision of the atomic weight of zinc, establishing the number 65.45 as that nearest to the true one. Different parts of the research on the cupriammonium double salts have been carried on by G. Oenslager, and A. H. Whitridge. Ten new compounds have been discovered including salts derived from the cupriammonium radical and hydrochloric, hydrobromic, hydriodic, formic, acetic, and lactic acids. F. C. Moulton has extended the work to the cuprianiline double salts, investigating the bromides and acetates. R. L. Emerson has worked upon prascodymium and neodymium, and W. F. Boos on the occlusion of baric chloride by baric sulphate.

F. G. Benedict, working under Professor Cooke, has studied the double chlorides of antimony with the metals of the alkalies and alkaline earths.

Dr. Bancroft has studied equilibrium problems in mixtures of three liquids, and has shown that the mass law governs these phenomena even in the most concentrated solutions. He has also examined the equilibrium of salts containing water of crystallization in presence of an indifferent gas, thus making a welcome beginning in a line of research on physical chemistry, which has not yet been followed in this Laboratory.

These researches have produced sixteen papers already published, or nearly ready for the press, beside a great deal of material not yet finished, which will be published later. In addition, papers have been published this year upon the work of Professor Hill with R. W. Cornelison on Crotonolactones, and Professor Jackson and F. L. Dunlap on bromresorcines done in previous years.

CHARLES L. JACKSON, *Acting Director.*

THE JEFFERSON PHYSICAL LABORATORY.

To the President of the University:

Sir: — Three graduate students were occupied during the year 1893–94 on investigations in the Laboratory, which they brought to a successful conclusion. One of these investigations, by Mr. Charles E. St. John, was on the wave length of electricity on iron wires; he showed that the magnetic nature of the iron affected the transmission of electrical waves. This result is in opposition to the views held by the leading authorities in Germany. Mr. St. John's paper appears in the *London Philosophical Magazine* for November. Another investigation, by Mr. P. L. Spaulding and Mr. H. B. Shaw, was on a heat method of measuring coefficients of self induction. A careful trial of the method convinced the authors of its practical use. The coefficient of self-induction is one of the most important quantities which enters into the transmission of power or of speech by electricity. A description of the method together with an account of its application appears in the proceedings of the *American Academy* for 1893–94. Mr. Spalding also constructed two large parabolic mirrors for the transmission and reception of electrical waves. It was intended to place one of these mirrors on the roof of the Scientific School and the other on the Physical Laboratory, the distance between them being about three hundred feet, in order to see if electrical waves which radiated from the focus of one of the mirrors could be perceived at the focus of the other. Preliminary experiments were made inside the Laboratory building. When the mirrors were placed forty feet apart, electrical waves sent out from one mirror could be detected at the focus of the other. Time did not permit of the trial of the mirrors in the positions for which they were designed. An interesting scientific result, however, was obtained from the limited use of the mirrors. The torrent of high frequency sparks from a Tesla coil, was not so efficacious in exciting electrical waves in the air as the small and less vigorous sparks from an ordinary Ruhmkorf coil.

The Director was engaged during the year on the study of electrical oscillations and has published in the *London Philosophical Magazine* a preliminary paper on "Electrical Resonance and Electrical Interference." The paper contains an account of a new apparatus for studying the subject, which promises to lead to many investigations; by its aid it was shown, independently of Mr. St. John, that the period of electrical oscillations on iron wires is changed by the magnetic nature of the conductor. A paper on this subject was published in the *American Journal of Science* for October. An investigation on the interferences produced when condensers, or reservoirs so to speak, of electricity are suddenly connected, was completed, but has not yet been printed.

Professor B. O. Peirce has published three short papers on physical subjects during the past year: (1) on the "Thermoelectric Properties of Manganine and Platinoid;" (2) on the "Characteristics of Batteries of Unlike Cells Joined up in Multiple Arc;" (3) on the "Electrical Conductivities of Some Poor Conductors."

He has been at work also with Dr. Willson in making preparations for an investigation on the laws of heat conduction in marble, slate, sandstone and other substances using a method, the outlines of which he drew some years ago.

Professor Hall gives the following account of his work: —

"In answer to your request, I submit the following report: My hours for research during the past year have been devoted to preparations for a study of the connection between temperature and thermal conductivity in the case of open-hearth steel. It is well known that there is a close relation between thermal conductivity and electric conductivity in metals. The electric conductivity of metals is known to decrease with rise of temperature, and the rate of change is well known in many cases. Much study has been given to the thermal conductivity of certain metals, but the conclusions of different observers as to the connection between this property and temperature are widely divergent. In both of the most approved methods of experimentation upon thermal conductivity, those of Forbes and Ångström respectively, the specific heat of the substance dealt with enters as an important factor, and the specific heat of any solid substance at any given temperature is proverbially difficult to determine. Each of the methods just mentioned makes use of a long bar of the metal to be examined. But the most obvious method, the method used by the first experimenters, employs a thin sheet or plate of the metal, between the two sides of which a certain difference of temperature is maintained, and in this method the specific heat need not be considered. The difficulty, however, of measuring accurately the difference of temperature between the two *surfaces* of the plate is so great, that this method led to absurdly inaccurate conclusions, and it was therefore abandoned. Any thermometer or thermopile placed in contact with either surface, usually heated or cooled by a stream of water, would give merely the temperature of the water at some little distance from the surface, or would by its very presence produce a local derangement of temperature at that part of the surface near which it was placed.

Two or three years ago it occurred to me that this particular difficulty might be overcome by coating both sides of a plate, an iron disk for instance, with copper, thus making the whole of each face of the disk a thermo-electric junction. By connecting the two copper coatings with a galvanometer, by means of copper wires of the same thermo-electric quality as the coatings, a current should be obtained which would indicate the *difference* in temperature of the two surfaces of the iron. The streams of water for heating or cooling the plate would produce their effect through the copper coatings. There would be no need of determining the temperatures of the outer surfaces of the copper coatings, which would be in contact with the water.

I have been working with a disk of iron, or open-hearth steel, about four inches in diameter and one-eighth inch thick, coated on both sides with copper electrolytically deposited. A number of difficulties have been encountered, among which may be mentioned that of maintaining a comparatively uniform and constant difference of temperature between the two faces of the plate, and that of connecting the copper wires to the copper coatings in such a way as to produce no serious disturbing effects. I believe that these and various other difficulties have now been successfully met and I hope before long to reach a satisfactory conclusion of my investigation."

Mr. W. C. Sabine was engaged during the past year in perfecting laboratory appliances for a new course on light and heat, which is called Physics 2. He has devoted much thought to the subject of Calorimetry, has visited the principal thermometer-makers and has examined the methods of testing thermometers at Yale University and at Johns Hopkins University. I believe that the apparatus used in Physics 2 will be found to be remarkably adapted for accurate wprk. A great amount of intellectual labor in a modern physical laboratory goes into the designing of apparatus suitable for the needs of students. The rapid advance in the subject of Physics, stimulated to a high degree by its practical applications, keeps an instructor constantly at work devising better forms of apparatus. An account of the intellectual life of the Laboratory would be incomplete if mention is not made of this silent but extremely important labor in which every instructor in the Laboratory has been occupied. Eight students obtained Second-Year Honors in Physics. This number is unusual, and is gratifying when one considers that both mathematical knowledge and experimental skill is demanded for Honors.

JOHN TROWBRIDGE, *Director.*

THE OBSERVATORY.

To the President of the University:

Sir, — The present report relates to the period of eleven months beginning November 1, 1893, and ending September 30, 1894. Hitherto the reports of the Observatory have taken date on the first of November of each year, but to bring them more nearly into conformity with the practice of other departments of the University a change has been made this year to the first of October. The most important events of the year have been the practical trial of the Bruce telescope and the successful operation for several months of the Boyden meteorological station on the summit of the Misti, at a height of 19,200 feet. The Observatory is indebted to Mr. Z. A. Willard for a valuable gift, an astronomical clock, constructed by Simon Willard, Jr., of Boston. The subterranean vault intended as a clock room by Professor Bond has been reopened, and if it can be rendered sufficiently dry the clock will be placed there. It is expected that the accuracy of our time signals will thus be materially increased.

An incident to be regretted has been a series of criticisms of the photometric work of the Observatory, which has been published during the year in local newspapers and other periodicals. So far as these criticisms have a scientific character they are answered below. A larger amount of space than usual has therefore been assigned to the description of the work of the meridian photometer, although it constitutes only about one-tenth of the entire work of the institution.

Observatory Instruments.

East Equatorial. — The systematic observation of variable stars upon the system described in previous reports continues to be the principal work of this instrument; but the photometric observation of the eclipses of Jupiter's satellites and several other classes of observation are also carried on as before. The observations were made by Mr. O. C. Wendell, except those of 3 of the 21 eclipses observed photometrically during the year, which were made by the Director. The total number of eclipses already observed is 546. The wedge photometer was used in 36 series of observations, comprising 1680 measurements, for determining the brightness of 560 stars occurring in the Durchmusterung. About seven thousand measurements were made with a polarizing photometer, including determinations of the relative light of the components of 53 of the brighter double stars; determinations of the brightness of variable stars; and measurements to extend the photometric scale to faint stellar magnitudes, relative estimates being also made for the same purpose. In addition to this, a series of measurements has been begun on some southern double stars whose combined light was determined with the meridian photometer at the Arequipa Station. Over four hundred relative estimates of variable stars have been made, and between one and two hundred absolute estimates, principally when the stars were faint. The regular observation of seventeen circumpolar variables has been continued as in past years, and the scheme is gradually being extended to all the known variables of long period.

Meridian Circle. — The reduction of the observations made with this instrument by Professor William A. Rogers continues under his supervision, and that portion of the work relating to the zone between the declinations + 49° 50′ and + 55° 10′ has been completed. Volume XXXV. of the Annals of the Observatory, containing the first half of the journal of the zones, has been printed, and a second volume, to contain the remainder of this journal, will be printed during the coming year. The observations of fundamental stars, made in the years 1880 to 1883 inclusive, are largely reduced, and will probably be published within two years more. This will complete the publication of the work done by Professor Rogers with the meridian circle.

The reduction of the observations of the southern zone between the declinations — 9° 50′ and — 14° 10′ has been continued through the year. Investigations have been made with regard to systematic errors in the observations of the fundamental stars, dependent upon declination and upon magnitude, but for the present these investigations cannot be completed, since their results will be somewhat affected by the future publication of the definitive places of the fundamental stars, from observations made at other observatories. Provisional constants, therefore, determined without regard to the investigations just mentioned, are employed in the preliminary reduction of the zone stars, which will be sufficiently precise to indicate the stars requiring additional observations. The portions of this reduction which are now complete for the entire series of observations are as follows: — The observed times of transit, reduced to the central line of the middle tally; the means of the microscope readings, corrected for error of runs; the reduction to the centre of the field required by the transits over the inclined lines used in the observations for declination; and the correction for the curvature of the paths of the stars through the field, known as the reduction to the meridian. The meteorological terms of the correction for refraction have also been computed throughout. The work recently in progress has been the completion of the reductions for January, February, and March of each year, in the hope that this may be finished in season to allow observations for revision to be undertaken early in 1895.

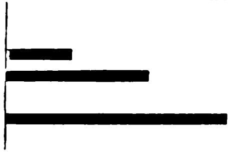
Observations of β Persei and a series of other stars near it in right ascension were made on seventeen nights during the winter, and the reduction of these observations is approaching completion.

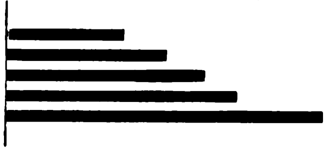
Meridian Photometer. — The reduction of the photometric measures of the southern stars observed by Professor S. I. Bailey in Peru, is now completed, and the catalogue containing the resulting magnitudes is in print. Observations have been made by the Director with the meridian photometer during about four hours on nearly every clear evening. The total number of series is 110, and of separate photometric settings 54,360. The observations of the first investigation undertaken with this instrument since its return from Peru are nearly completed. About six thousand stars have each been observed on at least three evenings. This catalogue includes all the stars of the Harvard Photometry, eighty lists of comparison stars for variables of long period, and various stars whose magnitude is desired by other astronomers. A study has been made of the atmospheric absorption, especially for very low stars, and its coefficient has been derived on each evening both for the southern and the northern stars. These values are now applied as corrections to the individual observations instead of adopting a mean value of the absorption. A new working list has been prepared of the stars north of —40° whose magnitude according to the best authorities is 7.5 or brighter, and which have not already been observed with the meridian photometer. This list contains about fourteen thousand stars, of which about two thousand have been observed during the last year.

An attempt has recently been made by Mr. S. C. Chandler to prove that the photometric observations made with the meridian photometer have little value. (Astron. Nach. Vol. 134, p. 355, and Vol. 136, p. 85.) It appeared that certain variable stars were incorrectly identified and observations of faint adjacent stars were obtained when the variables were too faint to be seen with this instrument. He claimed that erroneous observations were made in the case of fifteen out of eighty-six variable stars, and from this drew the extraordinary inference that similar errors affected the entire catalogue of twenty thousand stars contained in the same volume, although nearly all of the latter stars were bright enough to be readily measured, and identified with certainty. The most complete answer to this criticism is the extensive comparison recently made at the Potsdam Observatory of the photometric magnitudes obtained at that institution with those obtained here. Since this comparison is based on a large number of ultimate determinations obtained at both observatories it seems to dispose of inferences drawn from a few cases of exceptional difficulty. The Potsdam astronomers state that only four catalogues of the brightness of the stars are complete and correct enough for comparison with their own results. These are the Durchmusterung, the Uranometria Oxoniensis, and the Harvard results given in Volumes XIV. and XXIV. As was to be expected, the Durchmusterung magnitudes proved to be much less accurate than those in either of the other catalogues. The numbers of stars contained in each of the three photometric catalogues which were also observed at Potsdam are Oxford, 691, Harvard XIV., 791, and Harvard XXIV., 801. After applying a correction for color, the numbers of stars in these three catalogues whose brightness differs by half a magnitude or more from the Potsdam values, are 21, 6, and 13 respectively. For this and other reasons it was concluded at Potsdam that the order of accuracy of the results of the three catalogues is first Harvard XIV., second Harvard XXIV., and third Oxford. (Potsdam Publications, Vol. IX., p. 501.) The minimum number of nights' observation on which the results of Harvard XIV. depend is three, of Harvard XXIV. two. A comparison has been made at this observatory of the various magnitudes of the 40 discordant stars named above, as given in the five catalogues, Oxford, Potsdam, Harvard XIV., Harvard XXIV., and the revision mentioned above of the Harvard Photometry. Taking means and residuals of the magnitudes of the stars contained in three or more of these catalogues, the average deviations become, when arranged in the order of their magnitudes, for Revised Harvard Photometry, 0.11, Harvard XIV., 0.15, Harvard XXIV., 0.18, Potsdam, 0.21, Oxford, 0.29. The number of cases in which each catalogue gives the greatest or least value is similarly for Revised Harvard Photometry, 5, Harvard XIV., 6, Harvard XXIV., 10, Potsdam, 19, Oxford, 20. The order in both cases is the same, and serves to indicate the relative accuracy of the results of these five catalogues, which is also shown graphically in Table I. In two cases only do the Harvard XIV. and Oxford measures differ more than half a magnitude. Numerous other tests give a similar result. (See Astron. Nach., Vol. 135, p. 217.)

TABLE I.—NUMBER AND MAGNITUDE OF DEVIATIONS.

Order of Excellence.	Catalogue.	Number.	Average Deviations.	Number of Extremes.
I.	Revised Harv. Phot.	. .	0.11	5
II.	Harvard XIV.	6	0.15	6
III.	Harvard XXIV.	13	0.18	10
IV.	Potsdam.	. .	0.21	19
V.	Oxford.	21	0.29	20





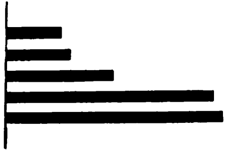
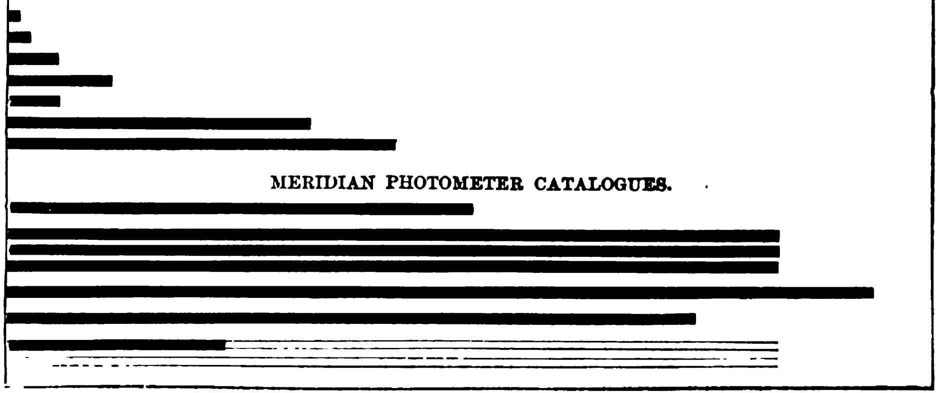


TABLE II.—NUMBER OF STARS IN VARIOUS PHOTOMETRIC CATALOGUES.

Catalogue.	Years.	Number of Stars.
Herschel.	1835–38	149
Seidel.	1844–60	208
Wolff I.	1869–75	475
" II.	1876–83	970
Peirce.	1872–75	494
Pritchard.	1881–85	2784
Potsdam.	1886–93	3522
MERIDIAN PHOTOMETER CATALOGUES.		
Vol. XIV.	1879–82	4260
Vol. XXIII.-IV.	1882–88	20982
Vol. XXXIV.	1889–91	7922
Vol. XLIV. (?)	1892–94	6000±
Vol. LIV. (?)	1893–97(?)	14000±



It is maintained that the meridian photometer possesses the same advantages in measuring the light of a star that the meridian circle does in measuring its position. In both instruments absolute values are determined directly, and they are obtained very rapidly. Stars are identified in the same way in both, rapidly and accurately, and in both the systematic errors are small even if the accidental errors are in some cases larger than those resulting from other methods. Stars can be observed with the meridian photometer under favorable circumstances nearly at the rate of one a minute, and the average deviation of the results thus obtained does not generally exceed one-tenth of a magnitude. The amount of material accumulated by the meridian photometer is shown graphically in Table II., which gives for the principal photometric catalogues hitherto published, and for those in preparation here, the designation, the years of observation, and the number of stars contained in each.

West Equatorial. — Observations of variable stars were continued by Mr. W. M. Reed with this instrument until February 11, 1894, since which time he has carried on the same work with the five-inch telescope belonging to Abbot Academy at Andover, Mass., the use of which was kindly granted for the continuation of the observations. The plan of the work comprises the observation of as many of the variable stars of long period as possible through all stages of their brightness. When any of them become too faint to be seen with the instrument employed by Mr. Reed, he reports the fact to this Observatory, where the stars are observed, so far as practicable, by Mr. Wendell with the large equatorial until they recover sufficient brightness to be again observed by Mr. Reed. The number of nights on which Mr. Reed has made observations is 123; the number of observations of variable stars is 1641; of comparison stars, 339; of stars at the limit of visibility, 70.

In addition to this work on variable stars, Mr. Reed observed 6 reappearances of satellites of Jupiter, all at Cambridge, and 22 telescopic meteors. He looked for aurora on every clear night when observations with the telescope were in progress, and recorded its presence on 12 occasions. On 10 dates he observed the phenomenon of Gegenschein and studied the faint bands of light in the zodiac. The satisfactory condition of the air at Andover, and the skill of the observer, are shown by the fact that he obtained observations of Gegenschein as late as May 11, and again, after it had passed the Milky Way, as early as August 5. No previous observations, so far as is known, have been made so near the same part of the Milky Way, except at Arequipa.

Henry Draper Memorial.

The number of photographs taken with the 8-inch Draper telescope is 1657. The number taken in Peru with the 8-inch Bache telescope is 1708. All of the spectra photographed with these instruments have been examined by Mrs. Fleming. As a result seven variable stars, U Puppis, V Cancri, V Leonis, T Sagittarii, R Delphini, R Vulpeculae and R Phoenicis, have been shown to have the hydrogen lines bright in their photographic spectra. Unsuccessful attempts have been made to photograph the spectra of many other variables of long period when at maximum, and no image has been obtained. This has been found to be due in many cases to large errors in the ephemerides, and has been remedied by depending upon the observations of Mr. Reed and making the time of photographing each star depend upon its observed, instead of its predicted brightness. Eleven new variables have been discovered this year from the presence of bright hydrogen lines in their spectra, besides three whose variability was discovered from changes in their photographic images. The number of stars of the fifth type has been increased by seven, making the total number of these objects 62. Five gaseous nebulae have been discovered from their spectra. The hydrogen line H β has been discovered to be bright in the spectra of five stars, and twelve stars have been shown to belong to the fourth type. The spectra of A. G. C. 18049 and 22640 are peculiar. Several photographs have been obtained of the new star in the constellation Norma, whose discovery was mentioned in the last report. At the Lick Observatory it was shown from visual observations that its spectrum, as in the case of the new star in Auriga, had become that of a gaseous nebula. This has been confirmed from photographs taken at Arequipa, which also show that this object is now gradually becoming fainter. The spectra of 4557 stars on 30 plates have been classified for the new Draper Catalogue. On one of these plates covering the region of the variable star η Carinae, 1161 spectra have been measured.

The number of photographs taken with the 11-inch Draper telescope is 912. The lines in the spectrum of ζ Ursae Majoris are found to be double in 59 out of 340 images, and of β Aurigae in 47 out of 65.

An investigation has been in progress for some time for the detection of stars having large parallaxes or proper motions. Photographs are taken in the usual position with the film towards the object-glass, and also with the plate reversed, the photograph being taken through the glass. These are repeated at intervals of six months at the times when the effect of parallax on their right ascension would have its greatest value. Plates thus obtained may then be superposed so that the films shall be in contact and the two images of each star made to appear like a close double with components north and south. Small changes in position may be detected by changes in the position angle, and the amount of the parallax or proper motion may be measured with great accuracy. Several hundred stars have thus been shown to have no parallax exceeding half a second.

BOYDEN DEPARTMENT.

The meteorological station on the Misti was successfully conducted for several months, one of the assistants, generally Mr. Waterbury, visiting it every ten days and readjusting the self-recording instruments. Unfortunately, early in September, the shelter containing the instruments was found to have been broken into and a number of the instruments carried off. Apparently the robbery was committed by two Indians whose tracks were followed to a considerable distance. The property stolen would of course be of no use to the thieves and its intrinsic value would be a small part of the actual loss. The work at this station was conducted with great labor, a mule path had been built to the summit and the entire expenditure had been large. It will be a serious loss to science if it proves impossible to maintain the station.

The number of photographs obtained by Professor Bailey with the 13-inch Boyden telescope is 561, including some remarkable charts. Among them may be mentioned photographs of the Nebula of Orion with an exposure of eight hours, of the cluster ω Centauri with an exposure of six hours, and of η Carinae with exposures of six and fourteen hours respectively. In some of these, notwithstanding the long exposure, the image shows no deviation from the circular form. This is mainly due to substituting for a finder two eyepieces attached to the main telescope. One of them serves to follow a guiding star in the usual way, the other directed to another star shows if the plate needs to be rotated in its own plane. This appears to be an important improvement in making the best photographic charts of long exposure, especially of the polar regions. By the ordinary methods it is impossible to entirely correct such errors as those due to flexure and refraction, which do not depend upon the direction of the axis of the earth.

Attention should again be drawn to the importance of availing ourselves of the admirable atmospheric conditions at Arequipa. A telescope of the largest size would not only have most favorable opportunities for work, but a field unexplored with such an instrument in the southern sky. Much could be done with a smaller instrument, as is shown by the work already accomplished with the

13-inch Boyden telescope. Out of a list of thirty telescopes whose aperture exceeds 14 inches or more, but one is mounted south of latitude + 35° and this one is not in use. A moderate expense only would be required to carry out this plan.

The Bruce Photographic Telescope.

A careful trial has been made of this instrument and 936 photographs have been obtained with it. The spectra of the faint stars prove very satisfactory and stars too faint to be photographed with the other instruments can thus be studied. Bright hydrogen lines have been found in the spectra of S Orionis, S Bootis, W Virginis and S Librae, and the spectrum of V Ophiuchi has been shown to be of the fourth type. The length of these spectra is about a quarter of an inch, which is sufficient to show much detail in the spectra of fairly bright stars. To study still fainter spectra a prism of crown glass and of smaller angle has been ordered. The absorption of the photographic rays is less for this material and it is expected that much fainter spectra can be photographed, since the dispersion will also be less. The contract has not yet been filled for the Bruce telescope, since difficulty is still experienced in making charts in which the images shall be circular. Experiments are in progress in this direction and it is hoped that the method described above as applied to the 13-inch Boyden telescope will prove equally successful with this instrument.

A variety of experiments has been made to determine the photographic magnitudes of the brighter stars on a uniform scale. It is now expected that this can be done with the transit photometer for stars brighter than the third magnitude, and that the scale can be extended to stars from the third to the sixth magnitude by a series of photographs which are being taken with a portrait lens having an aperture of 2.5 inches. The images are thrown out of focus and the intensity of the circular disks thus obtained can be accurately measured.

Miscellaneous.

Library. — The library of the Observatory has been increased since the time of the last report by the addition of 218 volumes and 529 pamphlets. The total numbers of volumes and pamphlets on October 1, 1894, were 7710 and 9989 respectively.

As the station at Arequipa, Peru, will be maintained permanently, it is desirable, owing to its remoteness, that it should have a library of its own. Copies of astronomical and meteorological works sent there direct, or through this Observatory, will be gratefully received and will prove of much value.

Telegraphic Announcements. — The distribution of telegraphic announcements of discovery has been continued as in past years, although Mr. Ritchie has resigned his position as Assistant in the Observatory. Astronomers are requested to continue to send to this Observatory announcements of their discoveries for transmission to the observatories of Europe and America.

Temporary absence of Observers. — Leave of absence, without salary, was granted on April 1st, 1894, to Professor W. H. Pickering and Mr. A. E. Douglass, in order that they might join the Lowell Observatory in Arizona. The 12-inch telescope and its stand were leased to Mr. Lowell from May 1st. No connection, however, exists between the two observatories.

Buildings and Grounds. — Since the time of the last report, a line of horse cars has been established on Concord Avenue, which forms the southern boundary of the grounds of the Observatory. The passage of these cars has no material effect upon the observations made here, but it is feared that the introduction of electric cars, which has been proposed, would be more detrimental. The widening of Concord Avenue, proposed last year, has not thus far been effected, and it is hoped that in any future change of that kind some means may be found of preserving the row of trees mentioned in the last report.

The electric lights, which seriously interfere with the observation of faint objects such as comets, nebulae, and zodiacal phenomena, prove an advantage in one way. They render visible faint clouds, which are carefully looked for every few minutes when the meridian photometer is in use. The effect is like that of the Moon, but as the lights are below the clouds instead of above them the latter become conspicuous even when too faint to be seen in moonlight.

Exhibition of Photographs. — The photographs sent to the Chicago Exhibition were safely returned, and by request were sent to California for exhibition at the Midwinter Fair. By the courtesy and aid of the Harvard Club of San Francisco and of Professor Holden, Director of the Lick Observatory, the photographs were successfully arranged for exhibition and safely returned.

Publications. — The printing of the following volumes of Annals of the Observatory has been finished: XXXV., containing the first half of the zone observations made by Professor Rogers between the declinations $+49° 50'$ and $+55° 10'$; XL., Part III., containing the

Blue Hill Meteorological Observations for 1893; and XLI., Part I., containing a summary of observations made by the New England Weather Service in 1892. Volume XXXII., Part I., containing a discussion of photographic and visual observations by Professor W. H. Pickering is nearly completed. 201 pages of Volume XXXIV., which contains the observations by Professor Bailey of the brightness of 7922 southern stars, are in type. Volume XLI., Part II., containing a summary of observations made by the New England Weather Service in 1893, is in progress. A description of the meteorological station on El Misti appeared in two articles by Mr. A. Lawrence Rotch (American Meteorological Journal, X., 282, and XI., 187, 201); and a description by Mr. S. P. Fergusson of the pole star recorder in use here, appears in the same Journal, XI., 62.

Besides the volumes of Annals above mentioned, the following publications have appeared during the year: —

Forty-eighth Annual Report of the Director of the Astronomical Observatory of Harvard College. Cambridge, 1893.

The Ultra-Violet Hydrogen Spectrum. By W. H. Pickering. Astronomy and Astro-Physics, xii. 171.

The Total Eclipse of April 16th. By W. H. Pickering. Ibid. xii. 461.

Telescope Mountings and Domes. By W. H. Pickering. Ibid. xiii. 1. Reprinted in Observatory, xvii. 73.

A Study of Nova Aurigae and Nova Normae. By W. H. Pickering. Ibid. xiii. 201.

Melting of the Polar Caps of Mars. By W. H. Pickering. Ibid. xiii. 308. Reprinted in Observatory, xvii. 173.

The Forms of the Discs of Jupiter's Satellites. By W. H. Pickering. Ibid. xiii. 423.

The Seas of Mars. By W. H. Pickering. Ibid. xiii. 553.

Jupiter's First Satellite. By W. H. Pickering. Astronomische Nachrichten, cxxxv. 227.

South American Meteorology. By W. H. Pickering. American Meteorological Journal, X. 343.

The Arequipa Observations of Mars and Jupiter. By W. H. Pickering. Publications of the Astronomical Society of the Pacific, vi. 221.

Les Satellites de Jupiter. By W. H. Pickering. L'Astronomie, xii. 468.

The Harvard Observatory in Peru. By W. H. Pickering. Harvard Graduates Magazine, ii. 350.

A Climb in the Cordillera of the Andes. By W. H. Pickering. Appalachia, vii. 205.

Observations of Comets 1892 I, II, III, V, VI, also 1893 I, II. By O. C. Wendell. Astronomische Nachrichten, cxxxiv. 175.

Ephemeris of Comet 1893 IV for January, 1894. By O. C. Wendell. Astronomy and Astro-Physics, xiii. 80.

Ephemeris of Comet 1893 IV for March, 1894. By O. C. Wendell. Ibid. xiii. 255.

Ephemeris of Comet 1894 I for June, 1894. By O. C. Wendell. Ibid. xiii. 514.

A Convenient Naked-Eye Star Atlas. By O. C. Wendell. Popular Astronomy, ii. 47.

Stars having Peculiar Spectra. By M. Fleming. Astronomy and Astro-Physics, xii. 810.

Two New Variable Stars. By M. Fleming. Ibid. xiii. 195. Popular Astronomy, i. 324.

Stars having Peculiar Spectra. By M. Fleming. Ibid. xiii. 501.

Stars having Peculiar Spectra. By M. Fleming. Astronomische Nachrichten, cxxxv. 195.

A New Star in Norma. By E. C. Pickering. Ibid. cxxxiv. 101. Astronomy and Astro-Physics, xiii. 40. Reprinted in Publications of the Society of the Pacific, vi. 53.

The New Star in Norma. By E. C. Pickering. Astronomische Nachrichten, cxxxiv. 181.

Anderson's Variable in Andromeda. By E. C. Pickering. Ibid. cxxxiv. 347.

Maximum of χ Cygni. By E. C. Pickering. Ibid. cxxxv. 127.

Variable Stars near 47 Tucanae. By E. C. Pickering. Ibid. cxxxv. 129.

New Variable Stars in Sculptor, Scorpius, Ophiuchus and Aquila. By E. C. Pickering. Ibid. cxxxv. 161.

The Photometric Catalogues of the Harvard College Observatory. By E. C. Pickering. Ibid. cxxxv. 217.

New Variable Star in Carina. By E. C. Pickering. Astronomical Journal, xiii. 79.

New Variable Star in Carina. By E. C. Pickering. Ibid. xiii. 147.

The New Star in Norma. By E. C. Pickering. Ibid. xiii. 398.

Photographic Determination of Stellar Motions. By E. C. Pickering. Ibid. xiii. 521.

The Astronomical Observatory. By E. C. Pickering. Harvard Graduates Magazine, ii. 241.

The Astronomical Observatory. By E. C. Pickering. Ibid. ii. 394.

The Astronomical Observatory. By E. C. Pickering. Ibid. iii. 87.

EDWARD C. PICKERING, *Director.*

THE MUSEUM OF COMPARATIVE ZOÖLOGY.

To the President and Fellows of Harvard College: —

During the past year the usual courses of instruction have been given at the Museum in the Natural History Laboratories. Those in Zoölogy were given by Professor Mark, Dr. Slade, Dr. Davenport, and Dr. Parker, assisted in the laboratory work by Messrs. W. E. Castle, J. H. Gerould, H. V. Neal, and W. S. Nickerson. Dr. W. McM. Woodworth has, as in previous years, taken charge of the laboratory work, and has given some lectures in the course on Microscopical Anatomy.

Professors Whitney, Shaler, Davis, and Wolff gave courses of instruction in Geology, Palaeontology, Physical Geography, Meteorology, and Petrography. Messrs. T. W. Harris, R. T. Jackson, J. B. Woodworth, R. E. Dodge, C. E. Ladd, T. A. Jaggar, L. S. Griswold, R. DeC. Ward, and H. L. Smyth were the assistants in these departments.

Professor Davis spent the past summer in Europe, with the special object of studying certain rivers and valleys in England, France, and Wurtemburg, and of attending the Sixth International Geological Congress in Zurich.

The Newport Marine Laboratory has, as usual, been opened to advanced students in Zoölogy. Eight students spent a part of their time in the Laboratory collecting material for their special investigations, which they will continue at the Museum, and prepare for publication.

The Laboratory was equipped with a microphotographic apparatus. Dr. W. McM. Woodworth, who spent considerable time at Newport, took a large number of slides of interesting pelagic types. He assisted me materially in preparing the illustrations for an article on some variations of the genus Eucope, which we hope to publish jointly during the coming winter. From our short experience with photography at the sea-shore, it is evident that it is destined to become an important adjunct to every marine laboratory as a rapid method of sketching, not only pelagic types, but fresh preparations, whether microscopic or macroscopic.

We have to thank Colonel Marshall McDonald, United States Fish Commissioner, for the facilities granted to our students in connection with their work at the Fish Commission Station at Wood's Holl.

It is greatly to be desired that, in addition to any general laboratory for reseach which may in the future be established, the University should have its own marine laboratory, in charge of the same instructors in the different departments, who are now obliged to discontinue the supervision of their students during a great part of their advanced work.

The income of the Virginia Barret Gibbs Scholarship was divided, according to the terms of the gift, among some of the students who occupied their time in the study of Marine Zoölogy.

Colonel Marshall McDonald has returned to us in excellent condition the material sent by the Museum to the Fish Commission Building of the Columbian Exhibit. The photographs illustrating the characteristic exhibition rooms have also been returned

On account of the greatly increased number of visitors at the Museum on Sundays, the city of Cambridge has detailed a special policeman for duty on that day.

The Museum has received an anonymous contribution, which was applied to the increase of Dr. Hagen's salary during a part of the past fiscal year.

We are indebted to Professor Hyatt for the care he has given to the palaeontological collections in his charge, and to Mr. Brewster for his interest in supervising the care of the collection of Birds and Mammals.

Owing to the immense accumulations of collections in former years, it has often been impossible for the assistants in charge to take proper care of the accessions; so that much material was often misplaced or improperly labelled. Our staff is so limited in numbers that it is most difficult for us to distribute their work to the best advantage of the collections. This is specially true of the large alcoholic and dry collection of Marine Invertebrates. Fortunately, thanks to Professor Faxon's interest in the collections placed under his charge, this unsatisfactory state of things is fast approaching an end. Mr. Faxon has also been indefatigable in his care of the exhibition collections. They have been greatly improved in their appearance since he has taken general charge of the exhibition rooms.

Our magnificent collections of Fossil Vertebrates and Invertebrates remain without a special custodian. Under these conditions it is of course impossible for us to fill intelligently the existing wants, and keep the collections up with the demands of the day. Until the means are provided for two Assistants, one for Vertebrate and one for Invertebrate Palaeontology, we cannot hope to make any progress toward the arrangement of the Palaeontological Exhibition Rooms.

The unfortunate condition of things existing in the Palaeontological Department is not wholly limited to those collections. It exists in nearly all the other departments, but to a less degree, — as in Conchology, in Entomology, in Marine Invertebrates, and in Birds and Mammals.

While it is not within the province of a University Museum to compete with national, state, or municipal establishments, either in this country or abroad, it should be possible for a University Museum to provide not only for the maintenance of collections necessary to promote original research among its Professors, but it should be also possible to make appropriations to obtain such additions to this material, either by purchase or by sending out collectors, as will keep the Professors and Assistants in touch with the progress of their departments.

In the Entomological Department I have to note the increased use of both the collections and library by entomologists and students.

Comparatively little progress has been made with the arrangement of the geological and geographical exhibition rooms, owing to the want of money for obtaining the necessary cases. With a very moderate expenditure a beginning might be made by using temporarily the cases from the Chicago Exposition given to the Geological Department by the Corporation, as a large number of specimens, both large and small, have been brought together, so that an exhibit of sufficient interest to warrant opening the rooms could probably be arranged.

The equipment of the Lecture Room of the Geological Department has been greatly improved by the installation of an electric lantern, and the formation of an extensive collection of photographs (the Gardner Collection), and the accumulation of a number of lantern slides specially selected by the different instructors.

I must again call attention to the crowded condition of the laboratories of the Zoölogical and Geological Departments, which causes great loss of time to both instructors and students. Some of the Assistants in those departments are temporarily housed in the rooms devoted to special collections, and do not have the facilities for work to which they are entitled. No progress has been made towards the equipment of the needed Vivarium and Aquarium.

In view of the increased demands made upon the Museum by the growth of the Undergraduate Department, from which our income is in no way benefited, the Corporation has kindly voted an annual subsidy of fifteen hundred dollars to the Museum, as repayment for the expenditures made in the past by the Museum on behalf of the Undergraduate Department, this allowance to continue until the indebtedness of the Museum is extinguished.

Our exchanges of publications with scientific societies are on a satisfactory footing. The Library has received from that source the usual number of invoices. The number of volumes in the Library is now over twenty-four thousand.

A list of the publications of the instructors and officers of the Museum, other than those contained in our Memoirs and Bulletins, will be found below.

The number of our publications during the past year has been much smaller than usual. We have only issued seven numbers of Vol. XXV. of the Bulletin, — less than one hundred pages. This is due in part to the number of unfinished reports of the "Albatross" Expedition, now in press, and also to the inability of the Museum to provide for the printing of the usual number of contributions from the Natural History Laboratories.

Owing to the financial straits of the Museum, Dr. Mark has been compelled to send the results of the work done in his department for publication to various scientific societies. He will thus be able to issue a few of the contributions from his laboratory; but there are at least five numbers, which, with the accompanying plates, will nearly fill a volume of the Bulletin, for which no provision has been made. The Museum has no funds specially devoted to publications. We have been able so far to meet the wants of the Zoölogical Laboratory, but, owing to the large outlays incurred by the Museum for the benefit of the Undergraduate Department, we shall be able to publish only a part of the contributions to the Bulletin from the different laboratories until the indebtedness of the Museum has been paid off. It is greatly to be hoped that this important function of the Museum will not be curtailed for any great length of time.

During the coming year the publications of the "Albatross" will more than supply this deficiency, as we may hope to issue the monograph of Professor Ludwig on the Holothuvians, the report of Dr. Bergh on the Opisthobranchs, of Dr. Ortmann on the Pelagic Schizopods, of Dr. Müller on the Ostracods, of Dr. Giesbrecht on Copepods, some of which are already in the hands of the binder, others in press, and others nearly completed. From the expedition of the "Wild Duck" to the Bahamas, a short paper by Mr. Dall on the Shells of the Bahamas, and one by Mr. A. G. Mayer on some Medusae from the adjoining waters, have been sent to the printers. I have myself nearly revised the proofs of the report on the Bahamas and the Coast of Cuba.

Mr. Garman has completed a memoir on the Cyprinodonts of North America, mainly based upon material brought together by

Professor Agassiz many years ago, and for which a number of plates had been prepared by Mr. Sonrel.

Professor Faxon's report on the Crustacea of the "Albatross" is in the hands of the printer. It is accompanied by over sixty plates, which are nearly all printed.

I have also received from Professor Alphonse Milne-Edwards the manuscript for a fine monograph on the Galatheidae of the "Blake," written in conjunction with Mr. Bouvier. This memoir is accompanied by twelve plates, which are now in the hands of the lithographer.

In connection with the explorations of the "Wild Duck" along the coast of Cuba, there were many interesting points connected with the history of the elevated coral reefs to which it was impossible for me to give the necessary attention. I therefore gladly availed myself of the proposition of Professor R. T. Hill of the United States Geological Survey to make an extended examination of parts of the coast of Cuba. The Director of the United States Geological Survey was kind enough to grant him leave of absence for three months. Professor Hill's expedition was most successful. I have received from him an interesting report on the geology of the Cuban coast. This will be published in the Museum Bulletin as soon as the necessary illustrations can be prepared. An abstract of his observations has been published in the September number of the *American Journal of Science*.

I have myself prepared for the Bulletin a report of my last winter's visit to the Bermudas. This will be published in the same volume with the report on the Bahamas. These two papers are specially devoted to the geological history of the Bahamas and Bermudas, and to the study of their coral reefs in connection with those of Florida, the Caribbean Sea, as well as the living and elevated reefs of the Cuban Coast.

From Messrs. Charles Wachsmuth and Frank Springer I have received the manuscripts and plates of their memoir on the Crinoidea Camerata of North America. This will form one of the most important publications on the subject ever issued. The authors have devoted years to the preparation of this magnificent monograph. The beginning of the work dates back to the time when Mr. Wachsmuth was Assistant at the Museum, having come to Cambridge at Professor Agassiz's request to take charge of the collection of Crinoids, of which the material brought together by Mr. Wachsmuth constituted an important part. After leaving Cambridge, Mr. Wachsmuth settled in Burlington, in the midst of the richest field of fossil Crinoids, and commenced a second collection. He then became associated with Mr. Springer, and the work interrupted more than twenty years ago was resumed, and has just been brought to a happy termination. To complement their own unrivalled private collections, the authors have been supplied with material from all private and public collections of the United States, and from many persons and public institutions abroad. The monograph is accompanied by 83 exquisite plates, drawn under the supervision of the authors in their Museum, by Messrs. Westergren and Ridgway. The publication of so elaborate a memoir will naturally require considerable time; but we hope to issue it as fast as it is practicable to print the manuscript and prepare the plates for publication. The memoir will occupy one volume of text and one of plates.

Mr. J. N. Rose, of the United States Department of Agriculture, has published a report on the Plants collected at the Galapagos during the "Albatross" Expedition of 1891, in Vol. I. No. 5 of the Contributions from the U. S. National Herbarium.

Professor Verrill reports good progress with his memoir on the Alcyonaria of the "Blake." About forty plates are now completed. Dr. Hartlaub is also well advanced with the report on the "Albatross" Comatulae. Mr. Hoyle has a number of plates to illustrate his report on the Cephalopods, and Professor Studer has the greater part of his memoir on the Alcyonaria in hand. With the consent of Colonel Marshall McDonald, a set of deep-sea Crustacea from the "Albatross" was sent to Professor Chun, who will prepare a report on the Eyes of Deep-Sea Crustacea in comparison with those of the surface and pelagic types.

Dr. A. Goes writes that he has completed his report on the "Albatross" Foraminifera, and that the manuscript, with the accompanying plates, is on its way to the United States. The collections of the "Albatross," as well as those made by the "Wild Duck" at the Bahamas, and the large collection of bottoms from the Caribbean and the east coast of the United States, sent him for comparison by the United States Coast Survey, the Fish Commissions, and the National Museum, are also packed and ready for shipment.

Mr. Westergren, having completed the plates for Mr. Faxon's Monograph on the Crustacea of the "Albatross" Expedition, has been occupied in drawing the illustrations for Mr. Garman's Monograph of the Fishes of the same expedition. Over twenty plates have been finished.

I may mention, as among the more important invoices sent from the Museum, the collection of deep-sea Crustacea and Echinoderms forwarded to the Oxford Museum with the consent of the Fish Commissioner.

Material for study has been sent, among others, to Mr. True, to Dr. Plate, to Messrs. Wachsmuth and Springer, and to Professor McMurrich. Additional "Albatross" material has been sent to Mr. Kofoid, of Ann Arbor, who will prepare a paper on this interesting group of Tolmogasteridae based upon material collected by the "Albatross" both in the Atlantic and in the Pacific. The Atlantic species have been intrusted to Mr. Kofoid by Professor Goode of the National Museum.

We have to thank Professor Mendenhall of the Coast Survey, and Commander Sigsbee of the Hydrographic Office, for charts, and for other assistance connected with my expeditions to the Bahamas and to the Bermudas. To Professor George Davidson we are indebted for a specimen of trachyte from Clipperton Island, and for a sketch of that atoll. To Capt. Wharton of the British Hydrographic Office I am also indebted for information regarding some early charts of the Bahamas, and to Capt. Barr, R. N., and to the Hon. A. Allison for assistance during my visit to the Bermudas.

Among our most important acquisitions I may mention a collection of birds from the "Albatross" Expedition of 1891, collected at the Galapagos, and determined by Mr. Robert Ridgway, and a general collection of shells, presented by the family of the late William M. Wheildon of Concord, Massachusetts.

From the United States Geological Survey, through the National Museum, we have received a fine slab of Climathtichnites Youngei, and some interesting fossils have been purchased from Mr. Charles Sternberg.

From the Royal Museum of Brussells we have received an admirable cast of an Iguanodon, which we propose to mount as the central piece of the Jurassic Exhibition Room. We are greatly indebted to Professor Dupont for the great trouble he took in making the arrangements necessary to procure this cast.

Mr. C. B. Riker has sent us an important series of borings from an artesian well on Port Royal Spit, Jamaica, which passes through the coral reefs of the Point. It is interesting to note that a preliminary examination of the specimens indicates a very moderate thickness of reef rock resting upon the older limestones.

To Professor Verrill we are indebted for sending us a series of corals collected by Professor Gabb from the elevated reef of Santo Domingo, for comparison with the species collected at various points of the elevated reef of Cuba during the "Wild Duck" Expedition. None of the species examined appear to differ from the Cuban types, and they also appear to be identical with species now living in the West Indian seas.

To Dr. Dall we are indebted for an examination of the tertiary Mollusks of the Cuban coast collected by the "Wild Duck."

Mr. Scott, I regret to state, has been unable to make any progress with his plans for the benefit of the Ornithological Department.

Among the collections sent us by the Fish Commission, which supplement the pelagic material collected by the "Albatross" in 1891 off Central America in the Pacific, is a small collection made by the "Albatross" with the Tanner tow-net on the line between San Francisco and the Sandwich Islands and in the Bering Sea. Captain Tanner reports that in the northern part of the Pacific the net was not used below two hundred and fifty fathoms from the surface, and when closed at that depth it contained very little if anything. In the hauls made at three hundred fathoms from the surface, on the other line, the closed part of the Tanner net did not bring up anything.

The Faculty of the Museum nominated, as occupants of the Naples Table for parts of the year 1893-94, Mr. E. L. Rice, a graduate of Wesleyan College, Middletown, who was recommended by Professor Richard Hertwig of Munich, and Mr. C. M. Child, recommended by Professor Leuckart. During the coming year Professor W. E. Ritter of the University of California, and Professor Reighard of the University of Michigan, formerly students of Professor Mark, will occupy the Museum table at Naples.

To Baron Osten-Sacken has been sent his entomological correspondence, deposited in the Museum Library many years ago, to assist him in working up many interesting points in the history of North American Diptera.

Miss Rathbun, of the National Museum, spent some time at the Museum examining the types of the "Blake" deep-sea Crustacea, and other collections of that group. Professor Nutting, of the State University of Iowa, brought his collection of Florida Hydroids to the Museum for comparison with the types collected by the "Blake" and described by Allman and others.

The Geological Department, following the example of the Zoölogical Department, is paying considerable attention to the formation of collections intended as means of instruction by the Professors, and also to the collection of other material to be known as students' collections, which are to be freely used by the students and to be replaced as fast as may prove necessary. In a University Museum like ours, which displays only a small part of its resouces to the public, and where the great bulk of the collection is stored in smaller rooms to be available for research, such a course as that pursued by the Geological Department is essential. There is a natural temptation for the Instructors to make the freest possible use in their class-room of the specimens originally placed on exhibition only for the benefit of the public, and of the students as part of that public. It needs but little experience to show that the use of the collections intended either for exhibition or for research for purposes of instruction is ruinous. No specimen can be moved from its case without detriment, and it seldom goes back to its place in as good a condition as it left it.

The Director of a Museum must decide how far it is for the benefit of science to allow specimens once placed on exhibition, or intended for research, to leave their shelves. It is a very different proposition to allow properly qualified persons access to collections from the indiscriminate use in the name of science of valuable material for purposes of instruction. My own experience teaches that, when a collection is once placed on exhibition, no one should be allowed to have access to the cases, or to the special collections, to remove the specimens, and nothing should sanction their use for purposes of instruction or of scientific examination, except in the clearest case of a positive gain for science by such a course. The Director of a Museum intended to meet the demands of the public, of the investigator, of the teacher, and of the student must provide each with the suitable material, and all attempts to perform these various functions with one collection will necessarily fail. This principle means, of course, a large amount of duplication, but this is essential for the safekeeping of valuable collections, which are too often sacrificed for comparatively unimportant scientific indulgences.

The following numbers of the Bulletin (Vol. XXV.) have appeared during the year: —

No. 1. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." VII. The Orthoptera of the Galapagos Islands. By S. H. Scudder. pp. 25. 3 plates. September, 1893.

No. 2. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." VIII. Compte-rendu sur les Pantopodes. Par W. M. Schimkéwitsch. pp. 17. 2 plates. December, 1893.

No. 3. Contributions from the Zoölogical Laboratory. XXXVIII. A Method of Orienting Small Objects for the Microtome. B. W. McM. Woodworth. pp. 3. December, 1893.

No. 4. Reports on the Dredging Operations off the West Coast of America to the Galapagos, etc., by the U. S. Fish Commission Steamer "Albatross." IX. Report on the Turbellaria. By W. McM. Woodworth. pp. 4. 1 plate. January, 1894.

No. 5. Reports on the Dredging Operations off the West Coast of Central America, etc. X. Note préliminaire sur les Alcyonaires. Par Th. Studer. pp. 17. January, 1894.

No. 6. Reports on the Dredging Operations off the West Coast of Central America, etc. XI. The Hydroids. By S. F. Clarke. pp. 7. 5 plates. February, 1894.

No. 7. Contributions from the Zoölogical Laboratory. XLI. The Origin of the Endocardium in Bony Fishes. By A. T. Holbrook. pp. 19. 5 plates. August, 1894.

ALEXANDER AGASSIZ.

CAMBRIDGE, October 1, 1894.

THE PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY.

To the President of the University:

Sir, — My leave of absence from the University having expired on January 1, 1894, I closed my labors in Chicago as Chief of the Department of Ethnology of the World's Columbian Exposition and resumed my collegiate and museum duties in Cambridge. It is sufficient in this connection to state that the various collections and apparatus belonging to the Museum, exhibited in the Anthropological and Liberal Arts Buildings, were returned to Cambridge with comparatively slight damage; and that several large casts of ancient sculptures from Central America, obtained by the joint expeditions of the Museum and the Exposition, have been received. Unfortunately only a few of these valuable aids to the study of the art and inscriptions of Central America can be set up in the Museum until new halls are added to the building.

Gifts. During the year contributions to the Museum and Library have been received from many friends both far and near. Owing to my long absence, the great accumulation of material, and the lack of room for its arrangement, only a small part of the many specimens received have been unpacked and catalogued. The unfortunate condition now exists that many important collections which should be exhibited must remain stored out of sight until an addition to the building is made. Many thousand objects are thus stored, one half of which would add greatly to the importance and interest of the Museum could they be exhibited, while the other half should be arranged in drawers for the use of persons engaged in special research. Our ethnological collections in particular are a source of constant anxiety. These are of great interest and many are of special value since they could not be replaced; and yet they have to be packed away in insect-proof cans and boxes awaiting the time when they can be displayed. Although very little money has been expended on the Library, it has become of considerable importance and contains 1360 volumes and 1683 pamphlets, all pertaining to anthropology. The books and pamphlets are all catalogued and arranged.

Thanks to the kindness of several friends of the Museum a special subscription of $5850 has been received which has enabled the Museum to secure several special collections made by explorations under my direction, and also to pay some unusual current expenses of the year growing out of our large accession of material. About $2500 is still required to pay for cases which had to be made. This payment will greatly hinder our work for the coming year, and we must hope that some kind friend will come to our relief.

Mr. Clarence B. Moore of Philadelphia — a graduate of Harvard and a member of the Visiting Committee — has not only made another generous gift of money to enable me to carry on a special exploration on the Atlantic Coast, but has also given us a good representative collection of the singular pottery which he obtained from a mound in Florida, and several other collections of interest from the burial and shell-mounds of that state. Mr. Moore has recently published an illustrated memoir of his explorations in Florida, which is a companion volume to that of the late Professor Wyman on the Shell-heaps of the St. Johns. He has given a specially bound copy of this valuable work to our Library.

Mrs. Mary Copley Thaw has most kindly given $50 toward the publication of Mrs. Nuttall's memoir on the Ancient Mexican Calendar. This memoir is still in press, as Mrs. Nuttall's continued researches have led to the discovery of new facts, which she is now elaborating to add to her memoir.

The Huntington Frothingham Wolcott Fund. The income of this fund for the past year was by vote of the Trustees used to defray in part the expenses of the expedition to South America by Mr. Dorsey in connection with the Department of Ethnology of the Columbian Exposition.

The Hemenway Collection. The following letter received from the Trustees of the estate of Mrs. Mary Hemenway was considered by the Trustees of the Museum at a meeting on May 3: —

BOSTON, April 24, 1894.

TO THE TRUSTEES OF THE PEABODY MUSEUM, Cambridge, Mass.:

Dear Sirs, — By the will of the late Mrs. Mary Hemenway, her Trustees are authorized to dispose of her collections of archaeological, historical and educational objects and relics in their discretion, but always in such manner as they shall deem best calculated to promote and assist in the study of history and archaeology.

It being Mrs. Hemenway's desire that said collections should be kept together and not dispersed, I write in behalf of the Trustees of Mrs. Hemenway's estate, to ask if your Board would see fit to give space in the

Museum for the installation of the collection pertaining to American Archaeology, the installation, classification, etc., to be under the immediate direction of Dr. J. Walter Fewkes, subject to the Director of the Museum, this work to be done at the expense of the Trustees of Mrs. Hemenway's estate; the ownership and absolute control of the collection to remain with said Trustees, they not being prepared at this time to commit themselves to a final disposition of the same.

The collections consist mainly of articles associated with the tribal life and history of the Zuni and Moqui Indians.

Yours truly,
AUGUSTUS HEMENWAY.

At the meeting of the Trustees the Curator said that the upper hall, 60 by 60 ft., in the new part of the Museum, which he had intended for the exhibition of the osteological collection, could be assigned to the Hemenway collection. The Trustees then voted to accept the collection on the terms specified in the letter of Mr. Hemenway, and a committee consisting of Messrs. Lowell, Salisbury and Bowditch was appointed to carry out the plan as suggested. Cases are now being made for the exhibition of the collection. This large and important addition to the Museum will prove of special importance, since it represents a region and tribes from which the Museum had very little material, as we had always purposely refrained from special work in a region where so much was being done by Mrs. Hemenway. Thus we shall soon have in the Museum the means for a comparative study of the arts and customs of the pueblo peoples with those of other portions of America whose arts and customs are already well illustrated in our Museum.

The Rindge Collection. From time to time Mr. Frederick H. Rindge has sent to the Museum portions of his remarkable collection of specimens of native art, principally from various parts of North America. During the past summer the objects were temporarily displayed in cases in the upper gallery, in order that Mr. Rindge might look them over with me preparatory to having a descriptive catalogue made. This collection contains the finest and most extensive lot of obsidian implements ever brought together from the Klamath country. Some of these chipped implements are remarkable for their size, and others for their beautiful finish. There are also gems of workmanship in stone, bone and ivory from the tribes of the north-west, and many carvings obtained from the Eskimo. While this interesting collection is for the present only deposited in the Museum, Mr. Rindge, with true appreciation of the scientific importance of bringing together all objects pertaining to a certain tribe or coming from a certain region, readily consents to the arrangement of the specimens in their appropriate places with others in the Museum. The collection will thus add important material for comparative study, and its owner will have the gratification of knowing that his collection is of special service to every student who visits the Museum; whereas, if kept by itself, it would be of little scientific use; it would only tell a partial story of the art of various scattered peoples.

Explorations. During the past year Mr. Volk has made an exploration of an ancient village site and burial place in the Delaware valley which has resulted in several interesting discoveries relating to the early inhabitants of the valley. It is probable that this very old site was occupied long before the immediate ancestors of the historical tribes made their advent into the valley; but more extended excavations must be made in order to prove the sequence of the occupancy, from glacial to historic times, of this most interesting region. Unfortunately we have not the money in hand to pay for the necessary labor.

In this connection I have the pleasure of recording the gift from Dr. C. C. Abbott of a quantity of material obtained from the site of an old Dutch trading house, which tells the story of the early contact of the white race with the Indians. As soon as this is arranged with the other Abbott collections it will make the final chapter of the story which begins with the stone implements found in the glacial gravels.

Mr. Willoughby has continued his examination of the singular and very ancient burial places on the coast of Maine, and with his remarkable skill and patience in the accomplishment of difficult tasks he has ascertained several important facts that help us to understand these strange graves. Many interesting objects were obtained during the exploration, some of which show Eskimo affinities.

The Honduras Expedition. In March last a special meeting of the Trustees was held to consider what course should be taken to continue the explorations at Copan. It was evident that, if some decisive effort were not made during this year, the concession secured by the Museum from the Government of Honduras would have to be given up, and this unparalleled opportunity for discoveries of scientific importance would be lost to the Museum and probably to science. The expressions at the meeting of the Board showed conclusively that this work was regarded as of the greatest importance to American archaeology, and that every effort should be made to continue the work. As the cost of this exploration is very great, and as the friends of the Museum have subscribed liberally for the two expeditions that have been in the field, it was decided to ask the coöperation of other institutions in the work, and to divide the results proportionately. Ten to twelve thousand dollars are required for a season's work; and about twelve hundred dollars have been subscribed by friends of the Museum for the expedition we hope to send out this year. Mr. Morris K. Jesup, the President of the American Museum of New York, has personally subscribed a thousand dollars for his museum, and hopes to secure additional subscriptions. Other institutions are now planning to take advantage of our offer and to join in the work, and with this encouragement we have organized the expedition, and have appointed Mr. George Byron Gordon, who was chief assistant under Mr. Owens on the last expedition, as the Director for this year. Mr. Gordon has already left for Tegucigalpa to make the necessary preliminary arrangements, and if the required amount of money is secured at once the other members of the expedition will start for Copan by the first of December. As work can only be carried on at the ruins during the dry season, from December to May, it is essential that those who are willing to aid this important scientific exploration should make their offers without delay. It is to be hoped that arrangements will be made during this winter by which the explorations can go on from year to year during the remaining years of the exclusive grant to the Museum by the Government of Honduras.

The specimens obtained by the previous expeditions are now arranged in the Central American Hall, but owing to the crowded condition of the hall, and the lack of protection to the casts of the huge sculptures, the hall is open to visitors on application only or when they are accompanied by some official of the Museum. The collection here displayed is of remarkable interest and is not equalled elsewhere. It is a constant source of wonder that such sculptures, such grand monuments, and such an abundance of hieroglyphic inscriptions exist in America. The smaller objects in the cases excite much interest on account of the singular ornaments, the effective designs, and the remarkable and delicate workmanship displayed. An examination of these objects and of the photographs and plans of the ruins and excavations will surely convince any skeptic of the importance of making a study of ancient American art and customs.

The following is a list of the subscribers to the previous expeditions: —

1891–92.

C. P. Bowditch	$1593.82	Mrs. G. G. Lowell	100.00
Stephen Salisbury	1593.82	Mrs. J. H. Wolcott	100.00
Miss Mary L. Ware	500.00	R. T. Paine	100.00
F. L. Ames	500.00	A. Lowell	100.00
M. Brimmer	500.00	A. Cochrane	100.00
Aug. Hemenway	500.00	Edmund Dwight	100.00
F. L. Higginson	400.00	Francis Blake	100.00
Ellen T. Mason	300.00	Mrs. A. Hemenway	100.00
J. M. Forbes	250.00	N. Thayer	100.00
H. Pickering	250.00	A. T. Lyman	50.00
J. L. Gardner	250.00	Miss Stokes	50.00
Mrs. C. E. Ware	200.00	Anonymous	10.00
Philip H. Sears	200.00		

1892–93.

C. P. Bowditch	$2000.00	N. Thayer	200.00
S. Salisbury	2000.00	A. Cochrane	100.00
Mrs. A. Hemenway	1000.00	Miss Stokes	100.00
J. M. Forbes	500.00	C. W. Amory	100.00
Miss E. F. Mason	500.00	Friend	100.00
F. L. Ames	500.00	A. Lowell	100.00
W. F. Weld	500.00	H. Lee	100.00
M. Brimmer	250.00	Mrs. G. G. Lowell	50.00

Instruction. The first graduate student to complete the course of three years in this department of the University is Mr. George A. Dorsey, who received the degree of Ph.D. at the last Commencement.

With the beginning of the college year, 1894–95, a course in General Anthropology was offered to graduates, and to undergraduates by permission. One graduate and four undergraduates have regularly entered the course, and two graduates, an undergraduate, and a special student are also taking it as an extra. This course requires nine hours a week of attendance for lectures and laboratory work. Owing to the comprehensive character of the instruction included in this department, and in order to be in keeping with general usage in other centres of learning, the designation of this department of instruction in the University should be changed from "American Archaeology and Ethnology" to *Anthropology*. This would indicate that Physical Anthropology and Comparative Archaeology and Ethnology, as well as special topics of American Archaeology and Ethnology are included in the course.

During the spring and summer months a course of ten afternoon lectures on Anthropology was given in the lecture hall of the Museum. These lectures were free to the public upon application for tickets, and the demand was greatly in excess of the seating capacity of the hall. Many members of the University attended the course, and persons specially interested came from Boston and adjoining towns. The lectures were as follows: —

1. Professor Putnam — Anthropology and what it includes.
2. Professor Toy — Primitive Culture as deduced from Language.
3. Professor Lanman — Early Life and Thought in India.
4. Professor Lyon — The Beginnings of Babylonian Culture.
5. Professor Goodwin — Prehistoric remains at Troy, Mycenae and Tiryns.
6. Mr. Nabuta Kishimoto, B.D. (Harvard) — Japan; its past and present.
7. Mrs. Stevenson (Honorary Curator Egyptian section Museum of University of Pennsylvania) — Egypt at the dawn of History.
8. Miss Fletcher (Holder of the Thaw Fellowship) — Indian Song in relation to the Indian's life and his moral and psychical development.
9. Mr. Dorsey (Holder of the Hemenway Fellowship) — The Necropolis of Ancon.
10. Professor Putnam — American Archaeology.

The Hemenway Fellowship. Mr. G. A. Dorsey held this fellowship for the year 1893–94. He has been appointed by the Corporation as Assistant in Anthropology, and will take part in the instruction in the course of General Anthropology for 1894–95.

The Thaw Fellowship. Miss Alice C. Fletcher, the holder of this fellowship, is now in Europe taking a well-deserved rest from her labors among the Indians. She is carrying on congenial researches with Mrs. Zelia Nuttall, Honorary Assistant of the Museum in Mexican Archaeology.

The American Museum of Natural History in New York. Mr. M. H. Saville, who was a student-assistant in the Museum for four years, and a member of several exploring expeditions of the Museum, and who for two years held the Visiting Committee's fellowship, resigned his position on the first of January last in order to accept that of Assistant Curator of Anthropology in the American Museum of New York.

During the spring the Trustees of the New York Museum offered to me the position of Curator of the Department of Anthropology of that museum, with the understanding that I was to reorganize the department on a broad basis, to plan for its future development and for exploration, and to direct its work. The opportunities here offered were in every way worthy of my most earnest consideration; but I felt that I could not leave the Peabody Museum to which for the last twenty years I have given my thought and my work. After several conferences with the Trustees of both museums and with the President of the University, it was finally arranged that I should continue my duties in Cambridge both in the museum and in the college, and should also accept the position of Curator of Anthropology in the New York Museum to which I should give one week each month. Thus since the first of June I have held both positions, and have so arranged my duties as to take one week of each month for my work in New York. This arrangement has thus far proved possible and I trust satisfactory to all concerned. My field of usefulness is certainly increased, and I am confident that mutual benefit will result from thus bringing into perfect harmony two important centres of anthropological research. The aims of the two museums are different, and perfect coöperation and harmony between them cannot fail to result in benefit to science.

It is with regret that I record the recent death of Dr. Hilborne T. Cresson who was a field assistant of the Museum for five years. During this time Dr. Cresson was engaged in explorations which added several important collections to the Museum. In July, 1892, he resigned his connection with the Museum in order to accept an appointment under Major Powell, Director of the Bureau of Ethnology of the Smithsonian Institution, for the special investigation of the Maya language and hieroglyphs. He was engaged in this study at the time of his sad death.

The Museum has met with a serious loss in the death of Professor J. P. Cooke, who was a Trustee of the Museum and was deeply interested in its objects and success. Professor Cooke's eminence in science and culture gave importance to every position he filled.

Summary of Receipts and Expenditures. As in preceding years no mention is made in the following account of the incomes of the Thaw and Hemenway fellowship funds which are paid by the Treasurer directly to the holders of the fellowships. Neither is record made of expenditures on account of the Honduras expeditions, which are kept in a separate account by the Committee appointed by the Trustees to take charge of the expeditions.

RECEIPTS, 1893–94.

Balance on hand from last account	$365.03	
Received gift from Clarence B. Moore (Explorations)	500.00	
" " " Mrs. Mary Copley Thaw (printing Mrs. Nuttall's Memoir)	50.00	
" " " Mrs. N. E. Baylies (annual)	25.00	
" " " N. E. Telephone, Telegraph Co., (annual)	28.00	
Received from Harvard College, care of Semitic room one year,	52.00	
" " F. C. Lowell, Treasurer, on account Wolcott Fund	593.64	
" " F. C. Lowell, Treasurer, on account special subscription	5850.00	
" " F. C. Lowell, Treasurer, Income Peabody Fund	4320.21	
Publications sold	63.55	
		$11,847.43

EXPENSES, 1893–94.

Building.		
Repairs, care and incidentals	$1405.20	
Fuel, water, and gas	296.02	
Furniture and shades	112.38	
		$1,813.60
Museum.		
Lumber and work in connection with Honduras Casts	143.37	
Photographing and materials	61.89	
Explorations and collections	5778.70	
Incidentals	167.87	
Express, Telephone, Telegraph and Postage	346.01	
Salaries	2864.39	
		9,362.23
Publications and Library.		
Reports, printing and engraving	583.15	
Subscriptions	23.96	
		607.11
Balance on hand, for Explorations		64.49
		$11,847.43

Respectfully submitted,

F. W. PUTNAM,

Peabody Professor of American Archaeology and Ethnology, and Curator of the Museum.

CAMBRIDGE, October 23, 1894.

THE SEMITIC MUSEUM.

To the President of the University:

Sir, — Since my last report as curator, the Museum has received by purchase the casts of thirty-three Babylonian-Assyrian seals, of a Babylonian inscription, of the cuneiform tablet found at Lachish, and of a Phoenician inscription. Of original objects there have been received from Tyre two stone heads with inscriptions, of the kind commonly known as Palmyrene, and a small stone sarcophaqus. To Professor F. W. Putnam we are indebted for two casts of the recently discovered alabaster tablet of Ramman-nirari. The original, from the fourteenth century B.C., is now on exhibition in the Boston Museum of Fine Arts. The price demanded by the owner is considerable, but it would be a source of great regret if we should not find some generous friend or friends to purchase the tablet for the Semitic Museum.

During the year various collections of manuscripts, Babylonian tablets and seals, and Phoenician glass-ware have been offered for purchase. These have been declined, chiefly because the specimens were not particularly good or because we have already enough of the kind offered.

Some of the casts from the Berlin Museum have not yet been put on exhibition because of a restriction imposed by the authorities of that Museum. This restriction has now been removed. Some of these casts will be exhibited so soon as the cases can be made, but others, owing to their size, must wait until we have more space.

There has been need of $1000 to buy additional cases for the Museum. Of this sum two friends had provided $125 before the last annual report. By a recent gift of $875 the Honorable Isidor Straus has made up the full $1000.

As in past years, Mr. John Orne has continued his study of our collection of Arabic manuscripts, and for several of these he has kindly prepared descriptive labels.

The collections of the Museum are of increasing value to the Semitic Department. But each year emphasizes the need of a building which shall be a home for the Museum, the Semitic Library and the instruction in Semitic. In my last report I mentioned the provisional subscription of $26,000 toward such a building. The wide-spread business depression of the past year has given a temporary check to the progress of the subscription.

D. G. LYON, *Curator*.

November 12, 1894.

APPENDIX.

RESIGNATIONS.

Sidney Roland Bartlett, Instructor in Mechanical Dentistry, October 30, 1893.

John Cassan Wait, Assistant Professor of Engineering, October 31, 1893, to take effect January 1, 1893.

Henry Pickering Bowditch, Dean of the Medical School, November 13, 1893, to take effect December 1, 1893.

George Bendelari, Instructor in History, December 11, 1893, to take effect September 1, 1894.

Charles Knowles Bolton, Assistant in the Library, December 11, 1893, to take effect December 16, 1893.

Bennett Hubbard Nash, Professor of Italian and Spanish, December 26, 1893, to take effect September 1, 1894.

Charles Joyce White, Professor of Mathematics, January 29, 1894, to take effect September 1, 1894.

George Martin Lane, Pope Professor of Latin, February 26, 1894, to take effect September 1, 1894.

Frederick Augustus Davis, Instructor in Physiology, April 30, 1894.

Oliver Whipple Huntington, Instructor in Mineralogy and Chemistry, May 7, 1893, to take effect September 1, 1894.

Theodore Henckels, Instructor in French, June 11, 1894.

Charles Loring Jackson, Acting Director of the Chemical Laboratory, September 25, 1894.

Edward Fulton, Instructor in English, September 25, 1894.

APPOINTMENTS.

[UNLIMITED, OR FOR TERMS LONGER THAN ONE YEAR.]

Herman Wadsworth Hayley, to be Tutor in Latin for three years from September 1, 1893, October 2, 1893.

William Townsend Porter, to be Assistant Professor of Physiology for five years from September 1, 1893, October 30, 1893.

Robert Swain Morison, to be Secretary of the Divinity Faculty, October 30, 1893, from September 1, 1893.

William Peabody Gerrish, to be Assistant in the Observatory, October 30, 1893, from September 1, 1893.

William Lambert Richardson, to be Dean of the Medical Faculty, November 13, 1893, from December 1, 1893.

George Martin Lane, to be Pope Professor of Latin, Emeritus, February 26, 1894, from September 1, 1893.

Francis James Child,
Charles Eliot Norton,
Charles Franklin Dunbar,
Crawford Howell Toy,
George Lincoln Goodale,
Morris Hicky Morgan,
to be members of the Council for the Library for three years from January 1, 1894, February 26, 1894.

Edward Stevens Sheldon, to be Professor of Romance Philology, April 9, 1894, from September 1, 1894.

Frédéric César de Sumichrast, to be Assistant Professor of French for five years from September 1, 1894, April 9, 1894.

Edward Cornelius Briggs, to be Assistant Professor of Materia Medica and Therapeutics for five years from September 1, 1894, April 9, 1894.

Hans Carl Günther von Jagemann, to be Assistant Professor of Germanic Philology for five years from September 1, 1894, April 9, 1894.

William Henry Pickering, to be Assistant Professor of Astronomy for five years from September 1, 1894, April 9, 1894.

Henry Langford Warren, to be Assistant Professor of Architecture for five years from September 1, 1894, April 9, 1894.

Comfort Avery Adams, to be Instructor in Electrical Engineering, April 9, 1894, from September 1, 1894.

Robert Tracy Jackson, to be Instructor in Palaeontology, April 9, 1894, from September 1, 1894.

James Lee Love, to be Instructor in Mathematics, April 9, 1894, from September 1, 1894.

Robert Louis Sanderson, to be Assistant Professor of French, April 19, 1894.

Maxime Bôcher, to be Assistant Professor of Mathematics for five years from September 1, 1894, April 30, 1894.

John Hays Gardiner, to be Instructor in English, April 30, 1894, from September 1, 1894.

Hammond Lamont, to be Instructor in English, April 30, 1894, from September 1, 1894.

Henry Lloyd Smyth, to be Instructor in Geological Surveying, April 30, 1894, from September 1, 1894.

Herbert Leslie Burrell, to be Assistant Professor of Clinical Surgery for five years from September 1, 1894, May 28, 1894.

George Wells Fitz, to be Assistant Professor of Physiology and Hygiene for five years from September 1, 1894, May 28, 1894.

Charles Montraville Green, to be Assistant Professor of Obstetrics for five years from September 1, 1894, May 28, 1894.

Joseph Torrey, to be Instructor in Chemistry, June 19, 1894, from September 1, 1894.

Charles Loring Jackson, to be Erving Professor of Chemistry, September 25, 1894.

Henry Barker Hill, to be Director of the Chemical Laboratory, September 25, 1894.

George Lyman Kittredge, to be Professor of English, September 25, 1894.

Theodore William Richards, to be Assistant Professsor of Chemistry for five years from September 1, 1894, September 25, 1894.

George Wells Fitz, to be Medical Visitor, September 25, 1894, from September 1, 1894.

Ernest Lee Conant, to be Instructor in Law, September 25, 1894.

[FOR ONE YEAR OR LESS.]

For 1893-94.

Raymond Calkins, to be Instructor in German, October 2, 1893.

Montague Chamberlain, to be Secretary of the Lawrence Scientific School, October 2, 1893.

Frederick William Truscott, to be Assistant in German, October 2, 1893.

William Vaughn Stoy Moody, to be Proctor, October 2, 1893.
Curtis Hidden Page, to be Instructor in French, October 30, 1893.
Alfred Cope Garrett, to be Instructor in English, October 30, 1893.
Charles Knowles Bolton, to be Assistant in the Library, October 30, 1893.
William Garrott Brown, to be Assistant in the Library, October 30, 1893.
Frank Carney, to be Assistant in the Library, October 30, 1893.
William Fenwick Harris, to be Assistant in Classics, October 30, 1893.
Thomas Augustus Jaggar, to be Assistant in Petrology, October 30, 1893.
George Edgar Ladd, to be Assistant in Geology, October 30, 1893.
Edgar Pierce, to be Assistant in Psychology, October 30, 1893.
Alfred Claghorn Potter, to be Assistant in the Library, October 30, 1893.
George Burr Richardson, to be Assistant in Physics, October 30, 1893.
Charles August Soch, to be Assistant in Chemistry, October 30, 1893.
Henry Ware, to be Assistant in Forensics, October 30, 1893.
George Grant McCurdy,
Edward Irving Manley,
Thomas Wayland Vaughan,
Hollis Webster,
} to be Proctors. October 30, 1893.
James Barr Ames,
George Alonzo Bartlett,
William Morris Davis,
Maurice Howe Richardson,
William Hooper,
Perry Davis Trafford,
} to be a Committee on the Regulation of Athletic Sports, November 13, 1893.
Alexander Burr, to be Instructor in Meat Inspection, November 13, 1893.
Frederick Edward Cheney, to be Instructor in Ophthalmology, November 13, 1893.
Frederick Augustus Davis, to be Instructor in Physiology, November 13, 1893.
George Brown Foss, to be Lecturer on Diseases of Dogs, November 13, 1893.
William Orison Underwood, to be Lecturer on Warranty and Evidence, November 13, 1893.
Lester Heard Howard, to be Clinical Lecturer, November 13, 1893.
Wesley Levi LaBaw, to be Demonstrator of Anatomy and Assistant Surgeon, November 13, 1893.
Francis Gordon Caffey, to be Assistant in Forensics, Nov. 13, 1893.
John Hildreth McCollom, to be Assistant in Bacteriology, November 13, 1895.
Henry Livingston Coar, to be Instructor in Mathematics, November 27, 1894.
William Joseph Miller, to be Proctor, November 27, 1894.
Arthur Morgan Day, to be Assistant in History, November 27, 1894.
Frank Edgar Farley, to be Assistant in English, November 27, 1894.
Edward Wyllys Taylor, to be Assistant in Pathology, November 27, 1894.
George Parker Winship, to be Assistant in History, November 27, 1894.
Charles Lowell Young, to be Assistant in English, November 27, 1894.
William Morse Cole, to be Proctor, December 6, 1894.
Henry Snow Parsons, to be Instructor in Mechanical Dentistry, December 11, 1893.
John William Henry Walden, to be Instructor in Latin, December 11, 1893.
Frederic Harper Holmes, to be Assistant in Physics, December 26, 1893.

George Wilton Moorehouse, to be Assistant in Physiology, December 26, 1893.

George Neil Stewart, to be Assistant in Physiology, December 26, 1893.

Cyrus Guernsey Pringle, to be Botanical Collector, January 29, 1894, for 1894.

Charles Albert Skinner Howlett, to be Assistant in Electrical Engineering, February 5, 1894.

Frank Irwin, to be Instructor in Mathematics, February 26, 1894.

Henry Lee,
William Sturgis Bigelow,
Arthur Astor Carey,
to be Trustees of the Museum of Fine Arts, March 5, 1894, from January 1, 1894, to January 1, 1895.

Claude Perry Jones, to be Assistant in Chemistry, May 7, 1894.

Jesse More Greenman, to be Assistant in the Herbarium, May 28, 1894.

For 1894–95.

Frank Brewster to be Instructor in the Peculiarities of Massachusetts Law and Practice, April 9, 1894.

Frederick Perry Fish, to be Lecturer on Patent Law, April 30, 1894.

John Wesley Churchill, to be Instructor in Elocution, April 30, 1894.

George Foot Moore, to be Lecturer on the Hebrew Religion and Literature, April 30, 1894.

Edward Hale, to be Assistant in Homiletics, September 25, 1894.

William Nickerson Bates, to be Instructor in Greek, April 9, 1894.

Daniel Denison Slade, to be Lecturer on Comparative Osteology, April 30, 1894.

Heinrich Conrad Bierwirth, to be Instructor in German, April 30, 1894.

Alphonse Brun, to be Instructor in French, April 30, 1894.

Raymond Calkins, to be Instructor in German, April 30, 1894.

Archibald Cary Coolidge, to be Instructor in History, April 30, 1894.

Charles Townsend Copeland, to be Instructor in English and Lecturer on English Literature, April 30, 1894.

Edward Fulton, to be Instructor in English, April 30, 1894.

John Joseph Hayes, to be Instructor in Elocution, April 30, 1894.

Theodore Henckels, to be Instructor in French, April 30, 1894.

James Gray Lathrop, to be Instructor in Athletics, April 30, 1894.

Alfred Bull Nichols, to be Instructor in German, April 30, 1894.

George Howard Parker, to be Instructor in Zoölogy, April 30, 1894.

Fred Norris Robinson, to be Instructor in English, April 30, 1894.

Frank Beverly Williams, to be Instructor in Roman Law, April 30, 1894.

Jay Backus Woodworth, to be Instructor in Geology, April 30, 1894.

William McMichael Woodworth, to be Instructor in Microscopical Anatomy, April 30, 1894.

Charles Lowell Young, to be Instructor in English, April 30, 1894.

Frank Dyer Chester, to be Assistant in Semitic Languages, April 30, 1894.

George Amos Dorsey, to be Assistant in Anthropology, April 30, 1894.

Henry Vaughan Abbott, to be Assistant in English, May 7, 1894.

John Henry Boynton, to be Assistant in English, May 7, 1894.

Lindsay Todd Damon, to be Assistant in English, May 7, 1894.

Thomas Hall, to be Assistant in English, May 7, 1894.
John Goddard Hart, to be Assistant in English, May 7, 1894.
William Vaughn Stoy Moody, to be Assistant in English, May 7, 1894.
Paul Elmer More, to be Assistant in Indo-Iranian Languages, May 7, 1894.
Charles Loring Jackson, to be Acting Director of the Chemical Laboratory, May 28, 1894, from September 1, 1894.
Frederick Redman Clow, to be Instructor in Political Economy, May 28, 1894.
Jean-Antoine Mure, to be Instructor in French, May 28, 1894.
George Ole Virtue, to be Instructor in Political Economy, May 28, 1894.
Jesse More Greenman, to be Assistant in the Herbarium, May 28, 1894.
Macy Millmore Skinner, to be Assistant in Semitic Languages, May 28, 1894.
John Heyl Vincent,
Elijah Winchester Donald,
Samuel McChord Crothers,
to be Preachers to the University, June 11, 1894.
William Duane, to be Assistant in Physics, June 11, 1894.
Frederick Levy Dunlap, to be Assistant in Chemistry, June 11, 1894.
Frank Bernard Gallivan, to be Assistant in Chemistry, June 11, 1894.
Gifford LeClear, to be Assistant in Physics, June 11, 1894.
Frederick Chase McLaughlin, to be Assistant in Physics, June 11, 1894.
George Burr Richardson, to be Assistant in Physics, June 11, 1894.
Harris Eastman Sawyer, to be Assistant in Chemistry, June 11, 1894.
Charles Milton Reed, to be Auditor of Foxcroft Club, June 11, 1894.
Willard Reed, to be Proctor, June 11, 1894.

LeBaron Russell Briggs,
George Alonzo Bartlett,
Frédéric César de Sumichrast,
Charles Rockwell Lanman,
Freeman Snow,
Josiah Royce,
Philippe Belknap Marcou,
Charles Gross,
Hugo Karl Schilling,
Morris Hicky Morgan,
Albert Andrew Howard,
Edward Cummings,
Arthur Richmond Marsh,
Joseph Torrey,
William Fogg Osgood,
Charles Benedict Davenport,
to be members of the Administrative Board of Harvard College, June 19, 1894.

James Mills Peirce,
James Bradstreet Greenough,
George Herbert Palmer,
William Gilson Farlow,
Charles Loring Jackson,
Edward Laurens Mark,
Benjamin Osgood Peirce,
Hans Carl Günther von Jagemann,
Edward Channing,
William James Ashley,
to be Members of the Administrative Board of the Graduate School, June 19, 1894.

Nathaniel Southgate Shaler,
Henry Barker Hill,
Edwin Herbert Hall,
Paul Henry Hanus,
Ira Nelson Hollis,
John Eliot Wolff,
George Wells Fitz,
to be Members of the Administrative Board of the Lawrence Scientific School, June 19, 1894.

Benjamin Rand, to be Assistant in Philosophy, June 19, 1894.

Martin Mower, to be Assistant in Fine Arts, June 19, 1894.

Charles Levy Whittle, to be Assistant in Mineralogy and Petrography, June 19, 1894.

Frank Cole Babbitt,
Sidney Miller Ballou,
John Henry Boynton,
William Ernest Castle,
Montague Chamberlain,
George Washington Cram,
Harry Irving Cummings,
Lindsay Todd Damon,
John Edgar Eaton,
Thomas Hall,
John Goddard Hart,
Herbert Lyon Jones,
Francis Stewart Kershaw,
James Edwin Lough,
Frederick Chase McLaughlin,
William Joseph Miller,
William Vaughn Stoy Moody,
Lewis Kennedy Morse,
Herbert Vincent Neal,
Herbert Maule Richards,
Frank Charles Schrader,
Macy Millmore Skinner,
Frederick Wilson Truscott,
George Parker Winship,
Hollis Webster,
to be Proctors, June 19, 1898.

Joseph Estlin Carpenter, to be Preacher to the University, June 26, 1894.

Wilder Dwight Bancroft, to be Instructor in Chemistry, June 26, 1894.

James Edwin Lough, to be Assistant in Psychology, June 26, 1894.

Edgar Pierce, to be Assistant in Psychology, June 26, 1894.

Charles Hamilton Ashton, to be Instructor in Mathematics, September 25, 1894.

Irving Babbitt, to be Instructor in French, September 25, 1894.

Henry Livingston Coar, to be Instructor in Mathematics, September 25, 1894.

John Cummings, to be Instructor in Political Economy, September 25, 1894.

Sydney Calvert, to be Assistant in Chemistry, September 25, 1894.

Enoch Howard Vickers, to be Assistant in History, September 25, 1894.

Oswald Garrison Villard, to be Assistant in History, September 25, 1894.

George Frederick Newton, to be Instructor in Designing and Drawing, February 26, 1894.

John Wheeler Bemis, to be Assistant in Architecture, April 9, 1894.

Arthur Leon Giblin, to be Instructor in Engineering, April 30, 1894.

William Edward McClintock to be Instructor in Highway Engineering, April 30, 1894.

William Vaughan Moses, to be Instructor in Drawing and Machine Design, April 30, 1894.

George Staples Rice, to be Instructor in Sanitary Engineering, April 30, 1894.

Daniel Lawrence Turner, to be Instructor in Surveying and Railroad Engineering, April 30, 1894.

Fred Bryce Jewett, to be Assistant in Physiology and Hygiene, September 25, 1894.

Lionel Simeon Marks, to be Instructor in Mechanical Engineering, September 25, 1894.

John George Jack, to be Arboretum Lecturer, April 30, 1894.

Samuel Holmes Durgin, to be Lecturer on Hygiene, June 11, 1894.

Theodore Willis Fisher, to be Lecturer on Mental Diseases, June 11, 1894.

Edward Marshall Buckingham, to be Instructor in Diseases of Children, June 11, 1894.

Arthur Tracy Cabot, to be Instructor in Genito-urinary and Clinical Surgery, June 11, 1894.

William Merritt Conant, to be Instructor in Anatomy, June 11, 1894.

Elbridge Gerry Cutler, to be Instructor in the Theory and Practice of Physic, June 11, 1894.

Francis Henry Davenport, to be Instructor in Gynaecology, June 11, 1894.

William Whitworth Gannett, to be Instructor in Clinical Medicine, June 11, 1894.

Frank Burr Mallory, to be Instructor in Pathology, June 11, 1894.

Samuel Jason Mixter, to be Instructor in Surgery, June 11, 1894.

Henry Parker Quincy, to be Instructor in Histology, June 11, 1894.

Herman Frank Vickery, to be Instructor in Clinical Medicine, June 11, 1894.

Francis Sedgwick Watson, to be Instructor in Genito-urinary Surgery, June 11, 1894.

Charles Francis Withington, to be Instructor in Clinical Medicine, June 11, 1894.

Franz Pfaff, to be Instructor in Physiology, June 26, 1894.

Walter Lincoln Burrage, to be Clinical Instructor in Gynaecology, June 11, 1894.

Frederick Edward Cheney, to be Clinical Instructor in Ophthalmoscopy, June 11, 1894.

Algernon Coolidge, to be Clinical Instructor in Laryngology, June 11, 1894.

Edward Cowles, to be Clinical Instructor in Mental Diseases, June 11, 1894.

Thomas Amory DeBlois, to be Clinical Instructor in Laryngology, June 11, 1894.

John Woodward Farlow, to be Clinical Instructor in Laryngology, June 11, 1894.

George Washington Gay, to be Clinical Instructor in Surgery, June 11, 1894.

Francis Boott Greenough, to be Clinical Instructor in Syphilis, June 11, 1894.

John Homans, to be Clinical Instructor in the Diagnosis and Treatment of Ovarian Tumors, June 11, 1894.

Philip Coombs Knapp, to be Clinical Instructor in Diseases of the Nervous System, June 11, 1894.

Abner Post, to be Clinical Instructor in Syphilis, June 11, 1894.

George Lincoln Walton, to be Clinical Instructor in Diseases of the Nervous System, June 11, 1894.

George Hamlin Washburn, to be Clinical Instructor in Gynaecology, June 11, 1894.

Charles Locke Scudder, to be Demonstrator of Surgical Apparatus, June 11, 1894.

Arthur Patterson Chadbourne, to be Demonstrator of Experimental Therapeutics and Pharmacology, June 26, 1894.

John Cummings Munro, to be Assistant Demonstrator of Anatomy, June 11, 1894.

John Lincoln Ames, to be Assistant in Histology, June 11, 1894.

Vincent Yardley Bowditch, to be Assistant in Clinical Medicine, June 11, 1894.

William Allen Brooks, to be Assistant in Anatomy, June 11, 1894.

Alexander Burr, to be Assistant in Bacteriology, June 11, 1894.

William Sohier Bryant, to be Assistant in Otology, June 11, 1894.

William Merritt Conant, to be Assistant in Clinical Surgery, June 11, 1894.

George Arthur Cragin, to be Assistant in Diseases of Children, June 11, 1894.

Edward Miller Greene, to be Assistant in Histology, June 11, 1894.

George Haven, to be Assistant in Obstetrics, June 11, 1894.

Henry Jackson, to be Assistant in Clinical Medicine, June 11, 1894.

James Oscar Jordan, to be Assistant in Materia Medica, June 11, 1894.

Robert Williamson Lovett, to be Assistant in Clinical Surgery, June 11, 1894.

John Hildreth McCollom, to be Assistant in Bacteriology, June 11, 1894.

George Howard Monks, to be Assistant in Clinical and Operative Surgery, June 11, 1894.

John Cummings Munro, to be Assistant in Clinical Surgery, June 11, 1894.

Jay Bergen Ogden, to be Assistant in Chemistry, June 11, 1894.

Charles Allen Porter, to be Assistant in Anatomy, June 11, 1894.

William Herbert Prescott, to be Assistant in Pathology, June 11, 1894.

Edward Reynolds, to be Assistant in Obstetrics, June 11, 1894.

Charles Locke Scudder, to be Assistant in Clinical Surgery, June 11, 1894.

George Gray Sears, to be Assistant in Clinical Medicine, June 11, 1894.

Myles Standish, to be Assistant in Ophthalmology, June 11, 1894.

Arthur Kingsbury Stone, to be Assistant in Bacteriology, June 11, 1894.

John Baker Swift, to be Assistant in Gynaecology, June 11, 1894.

Edward Wyllys Taylor, to be Assistant in Pathology, June 11, 1894.

Benjamin Tenney, to be Assistant in Anatomy, June 11, 1894.

Paul Thorndike, to be Assistant in Clinical Surgery, June 11, 1894.

Charles Wendell Townsend, to be Assistant in Obstetrics, June 11, 1894.

Arthur Howard Wentworth, to be Assistant in Diseases of Children, June 11, 1894.

Charles Pomeroy Worcester, to be Assistant in Chemistry and Secretary of the Medical Faculty, June 11, 1894.

James Homer Wright, to be Assistant in Pathology, June 11, 1894.

Harry Oliver Bixby, to be Instructor in Mechanical Dentistry, June 19, 1894.

Arthur Warren Eldred, to be Instructor in Mechanical Dentistry, June 19, 1894.

Arthur Judson Oldham, to be Instructor in Mechanical Dentistry, June 19, 1894.

George Howard Monks, to be Instructor in Surgical Pathology, June 19, 1894.

Harry Snow Parsons, to be Instructor in Mechanical Dentistry, June 19, 1894.

Arthur Henry Stoddard, to be Instructor in Mechanical Dentistry, June 19, 1894.

George Lincoln Walton, to be Instructor in Neurology, June 19, 1894.

Fred Homer Woodcock, to be Instructor in Mechanical Dentistry, June 19, 1894.

Edwin Carter Blaisdell,
Waldo Elias Boardman,
Frederick Bradley,
Forest Greenwood Eddy,
Ellis Proctor Holmes,
Frederick Sylvanus Hopkins,
Charles Manning Keep,
Henry Webster Gillett,
Charles Ernest Perkins,
Ezra Fletcher Taft,
Frank Turner Taylor,
Henry Lauriston Upham,
to be Instructors in Operative Dentistry, June 19, 1894.

Dwight Moses Clapp, to be Clinical Lecturer in Operative Dentistry, June 19, 1894.

William Henry Potter, to be Clinical Lecturer in Operative Dentistry, June 19, 1894.

Patrick William Moriarty, to be Demonstrator of Mechanical Dentistry, June 19, 1894.

Joseph Totten Paul, to be Demonstrator of Operative Dentistry, June 19, 1894.

Nathan Prindle Wyllie, to be Assistant Demonstrator of Operative Dentistry, June 19, 1894.

Alexander Burr, to be Instructor in Meat Inspection, September 25, 1894.

Frank Ingersoll Proctor, to be Instructor in Ophthalmology, September 25, 1894.

William Orison Underwood, to be Lecturer on Warranty and Evidence, September 25, 1894.

George Brown Foss, to be Resident Hospital Surgeon and Lecturer on Diseases of Dogs, September 25, 1894.

Lester Heard Howard, to be Clinical Lecturer, September 25, 1894.

Wesley Levi LaBaw, to be Demonstrator of Anatomy and Assistant Surgeon, September 25, 1894.

John Lincoln Ames, to be Assistant in Histology, September 25, 1894.

PRAESES SODALESQVE CONLEGI RADCLIVIANI

Omnibus ad quos hae litterae pervenerint salutem.

Cum ea quae more instituloque nostro academico imperantur gradum petentibus IN ARTIBUS *praestiterit discipula nostra*

eam ad hunc gradum consentientibus Praeside Sociisque Conlegi Harvardiani ex lege admisimus cique omnia iura et insignia huc spectantia dedimus concessimus. In cuius rei testimonium curavimus ut his litteris Cantabrigiae die Iunii a. s. n. datis sigilloque nostro munitis Praeses nostra nomen suum subscriberet.

Praeses Conlegi Radcliviani.

Quod *Conlegium Radclivianum ad gradum in Artibus admisit nos* PRAESES SOCIIQVE CONLEGI HARVARDIANI *re cognita hanc idoneam fuisse quae eo admitteretur atque hunc gradum ei ad quem simili in re nostros admittimus discipulos parem esse atque aequalem per manum Praesidis cum sigillo nostro adpositam testificamur.*

Praeses Conlegi Harvardiani.

CAMBRIDGE, June 11, 1894.

GENTLEMEN:—The expenditures and receipts of the Harvard Dining Association for the month of May were as follows:—

DR.

Bills paid,	$19,487.26
Water charge,	45.59
Interest on Debt,	131.55
Interest on Advances,	364.96
Reduction of Debt,	166.67
Summer Repairs,	175.00
Crockery Assessment,	187.60
Allowances for Sunday Absence,	567.10
Stock on hand May 1, 1894,	1,737.22
	$22,862.95

CR.

Stock on hand June 1, 1894,	$1,528.18
Sale of Grease and Bones,	306.60
" " Swill,	29.16
" " Cold Food, &c.,	98.35
Extras ordered,	2,872.45
Crockery charged to Surplus,	132.95
Gas and Coal charged to Sanders Theatre,	4.55
Balance,	17,890.71
	$22,862.95

Dividing this balance $17,890.71 by 4690, the number of weeks, gives $3.81 and adding head-money .10 we have $3.91 as the cost of board per week during the month of May.

An analysis of this charge of $3.91 gives the following result:—

	Total for Month.	Per Week.
Provisions,	$12,191.38	$2.60
Service,	3,355.06	.71
Coal,	322.33	.07
Water,	45.59	.01
Gas,	134.42	.03
Crockery Assessment,	187.60	.04
Interest,	496.51	.10
Reduction of Debt,	166.67	.03
Summer Repairs,	175.00	.04
Repairs,	27.30	.01
Allowances for Sunday Absence,	567.10	.12
Miscellaneous,	221.75	.05
		$3.81
Head-money,		.10
	$17,890.71	$3.91

Respectfully submitted,

LYMAN B. FISK, *Auditor.*

TO THE BOARD OF DIRECTORS, HARVARD DINING ASSOCIATION,
Cambridge, Mass.

CAMBRIDGE, Dec. 12, 1894.

GENTLEMEN: — The expenditures and receipts of the Harvard Dining Association for the month of November were as follows: —

DR.

Bills paid (less Water Bill),	$18,884.80
Water Charge and Bill,	108.43
Interest on Debt,	121.55
Interest on Advances,	114.88
Reduction of Debt,	166.67
Summer Repairs,	175.00
Crockery Assessment,	191.60
Allowances for Sunday Absence,	562.60
Stock on hand Nov. 1, 1894,	3,099.26
	$23,424.79

CR.

Stock on hand Dec. 1, 1894,	$2,815.53
Sale of Grease and Bones,	312.75
" " Swill,	29.34
" " Cold Food, &c.,	155.42
Extras ordered,	1,441.20
Crockery charged to Surplus,	163.51
Coal and Gas charged to Sanders Theatre,	23.21
Balance,	18,483.83
	$23,424.79

Dividing this balance $18,483.83 by 4790, the number of weeks, gives $3.86 and adding head-money .10 we have $3.96 as the cost of board per week during the month of November.

An analysis of this charge of $3.96 gives the following result: —

	Total for Month.	Per Week.
Provisions,	$12,703.55	$2.65
Service,	3,314.77	.69
Coal,	355.76	.07
Water,	108.43	.02
Gas,	215.80	.05
Crockery Assessment,	191.60	.04
Interest,	236.43	.05
Reduction of Debt,	166.67	.04
Summer Repairs,	175.00	.04
Repairs,	116.65	.02
Allowances for Sunday Absence,	562.60	.12
Miscellaneous,	336.55	.07
		$3.86
Head-money,		.10
	$18,483.83	$3.96

Respectfully submitted,

LYMAN B. FISK, *Auditor.*

TO THE BOARD OF DIRECTORS, HARVARD DINING ASSOCIATION,
Cambridge, Mass.

FOXCROFT CLUB.

HOURS FOR MEALS.

Breakfast, 7.30 to 8.50; Lunch, 12.00 to 1.30; Dinner, 5.15 to 6.30.
Sunday: Breakfast, 8 to 9.30; Lunch, 12.30 to 1.30; Dinner, 5.30 to 6.30.

Tea	3 cts.
Coffee	3 "
Cocoa	3 "

Glass of Milk	2 "
Bowl of Milk	4 "

Cheese	1 ct.
Butter	1 "
Pickles	1 "

White Bread (2 slices)	1 ct.
Graham Bread (2 slices)	1 "
Corn Bread (1 piece)	1 "
Graham Gems (each)	1 "
Crackers (plate)	3 cts.

Gingerbread (1 piece)	1 ct.
Cookies (2)	1 "

PIES.	
Apricot	5 cts.
Peach	5 "
Mince	5 "
Apple	5 "
Cranberry	5 "

FRUIT.	
Oranges	2 cts.
Apples	2 "
Bananas	2 "
Preserves	3 "

BREAKFAST AND LUNCH.

Oatmeal and Milk	4 cts.
Wheat and Milk	4 "
Hominy and Milk	4 "
Rice and Milk	4 "
Cold Meats	10 "
Hot Potatoes	2 "
Baked Beans	4 "
Eggs (2) Boiled	8 "
Eggs (2) Dropped	8 "
Eggs (2) on Toast	10 "
Egg Omelette	10 "
Soup for Lunch	4 "
Dry Toast (2 slices)	2 "
Buttered Toast (2 slices)	3 "

DINNER.

Roast Beef	10 cts.
Rolls	1 ct.

Other Dishes will be Added at the Discretion of the Steward.

EXTRAS.

Breakfast, Dec. 24.

Beef Steak	10 cts.
Fried Sausage	10 "
Buckwheat Cakes and Maple Syrup	7 "
Baked Potatoes	2 "
Damson Preserve	3 "
Stewed Prunes	3 "

Lunch, Dec. 24.

Barley Broth	4 cts.
Beef Stew and Dumpling	10 "
Frizzled Beef and Cream	3 "
Cold Boiled Ham	10 "
Cold Roast Beef	10 "
Baked and Boiled Potatoes	2 "
Cabinet Pudding	5 "
Apricot Preserve	3 "
Baked Apples	3 "
Pilot Bread	2 "

Dinner, Dec. 23.

Roast Chicken	12 cts.
String Beans	3 "
Parsnips	3 "
Mashed or Sweet Potatoes	2 "
Bread and Butter Pudding	5 "
Pound Cake	1 ct.
Fruit Cake	1 "
California Peaches	3 cts.
Apple Sauce	3 "

Dinner, Dec. 24.

Roast Stuffed Veal	10 cts.
Boiled Onions	3 "
Corn	3 "
Mashed or Boiled Potatoes	2 "
Cottage Pudding	5 "
Cream Pie	5 "
Fruit Cake	1 ct.
Strawberry Preserve	3 cts.
Apple Sauce	3 "

Faculty of Arts and Sciences,
Special Meeting, June 7, 1894.

Voted, *that the following minute be adopted and entered on the record as the sense of the Faculty:*

Voted, *also that it be communicated to the governing boards of the University:* —

The Faculty of Arts and Sciences desire to commemorate the completion of the twenty-fifth year of President Eliot's administration by placing this minute on their records.

President Eliot entered on his office on the nineteenth day of May, 1869. It appears from the records of the College Faculty that he took his seat as its presiding officer at a meeting held on the seventh day of June.

The progress which since that time has taken place in the departments of the University under the charge of this Faculty, as well as in its other schools, is far greater than has been made in any like period since the foundation of Harvard College. That progress has been not merely a growth in numbers, wealth, and intellectual resources, not merely an advance along old and conspicuous lines; but a transformation of nature and spirit, a new birth of university life. President Eliot found here, at his accession, many survivors of a group of men of distinguished talents and learning, who gave wide fame to the institution, and had striven in its Faculty for a generation to lift it to the higher and freer plane of activity on which alone true scholarship can be formed. But in spite of all that had been accomplished at that time, and of all that was due to the well won reputation of individual professors, — to whom the Faculty still look back with veneration and pride, — it is the period of the present administration that will be remembered hereafter as the epoch in which the University was first fairly able to take its place among the great seats of learning of the world, and to adopt as its foremost purpose, not simply the regulation of more or less unwilling youth in the last years of their schooling, but the nurture, discipline, and inspiration of men destined to devote their whole future to scholarship, science, philosophy, criticism, or art, and of students laying serious foundations of lifelong culture, — the leaders of the coming generation in the search for new knowledge, the establishment of new standards, and the creation of new intellectual forms.

The foundation of the progress thus made has been in the development of the elective system. That system, — feebly inaugurated more than two generations ago, and in 1869 still confined within strictly academic limits, and permitting little real play to diversities of intellectual interest, — has become what it now is through the wise and courageous policy, which assumed great risks in order to widen the field of study on every side, to multiply courses and instructors in every part of the broad domain of modern inquiry, to promote in each department, without regard to traditional rules, the methods of study and teaching found best for that department, and at last to obliterate nearly every relic of a required curriculum, and give to all study in Harvard College the essential characters of a freely chosen pursuit. In close connection with academic freedom of study stands that of conduct. The abrogation of the old undignified system of petty regulations, with their accompanying pains and penalties, and the adoption of a manly and liberal method of government, appealing to the conscience and reason of the student, are especially due to President Eliot individually; and the salutary effect of these measures on the tone and character of the University are visible to all who know it intimately and can compare its present state with that of an earlier day.

The creation of the Graduate School is the complement and necessary outcome of the elective system; and the first movement in the direction of systematic instruction for graduates was made by President Eliot in the very first weeks after his accession to office. The Faculty bear their testimony to the strong and steady faith with which the President has supported the Graduate School from the beginning, through its long years of insignificance and of apparent failure to justify the aspirations with which it was founded; and congratulate him on the result, which now makes that School one of the most important points of relation between the University and the whole country, and better enables Harvard to take her place as a great institution of learning, engaged in advancing the limits of knowledge by the concurrent labors of teachers and taught.

Among the services of President Eliot to Harvard University, the Faculty cannot fail to mention his frank and wise recognition of the fact that Harvard could not fulfil the mission he imagined for it without both the material and the intellectual wealth, which must be brought by numbers and by popular sympathy and interest. The bold adoption of this fundamental principle of action, — accepted with difficulty by many devoted lovers of Harvard, twenty-five years ago, — has enabled the University, while gaining strength and freedom for herself, to discharge one of her highest duties to the country, by opening her doors more widely to both students and teachers of diverse training, wherever found, helping to disseminate the influences of good learning throughout all parts of the United States, and thus becoming a participant and prime mover in the general life of the day.

The Faculty of Arts and Sciences bear their testimony also to the dignity, fairness, patience, and sound judgment with which President Eliot has invariably discharged the difficult duties of the chair. In this function as moderator of debate, in the presentation of his own views, and in the appointment of committees, he has made it his constant aim to have all opinions justly represented, and to secure the consideration of every important question from all reasonable points of view. He has endured, without flinching, the most wearisome prolongations of debate. He has never left a doubt in any mind of his absolute devotion to the good of the University, of his high sense of public duty as the administrator of a great trust, or of his unstinted use of every power at his command to discharge that duty efficiently.

The members of the Faculty offer to President Eliot their congratulations on the completion of this long period of noble and devoted service. We add to those congratulations the expression of our earnest hope that he may continue to direct the destinies of Harvard for many years to come; and that these years may be as honorable, brilliant, and fortunate as those which have passed, bringing their abundant rewards, in the growing dignity and usefulness of the University, and in every happiness of private life.

NUMBER OF ORDINARY DEGREES IN 1894.

Bachelors of Arts of the Class of 1894	348
Bachelors of Arts out of course	21
Bachelors of Science	19
Bachelors of Science out of course	1
Bachelors of Agricultural Science	1
Bachelors of Divinity	2
Bachelors of Divinity and Masters of Arts	2
Bachelors of Laws	66
Bachelors of Laws out of course	4
Bachelors of Laws and Masters of Arts	14
Doctors of Medicine	116
Doctors of Medicine and Masters of Arts	8
Doctors of Dental Medicine	14
Doctors of Science	2
Doctors of Veterinary Medicine	7
Masters of Arts	87
Masters of Arts out of course	6
Doctors of Philosophy	16
Total	734

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TREASURER'S STATEMENT.

SIGILLVM ACADEMIAE HARVARDIANAE IN NOV ANG
CHRISTO ET ECCLESIAE
VE RI TAS

1894.

TREASURER'S STATEMENT.

To the Board of Overseers of Harvard College: —

Before making the usual statement of accounts the Treasurer wishes to say that during the past seventeen years the success of the University in its investments has been largely due to the good judgment and unselfish labor of John Quincy Adams, late Fellow of the Corporation and the most active member of the finance committee.

The Annual Statement of the financial affairs of the University, for the year ending July 31, 1894, is now submitted.

The Funds separately invested, with the income thereof, are as follows: —

UNIVERSITY.	Principal. July 31, 1894.	Income.
George B. Dorr Fund,		
University Houses and Lands, ...	$115,966.56	$3,797.65
Francis E. Parker Fund,		
University Houses and Lands, ...	113,817.44	3,727.28
John C. Gray Fund,		
University Houses and Lands, ...	25,000.00	818.69
Joseph Lee Fund,		
University Houses and Lands, ...	10,000.00	327.48
Insurance and Guaranty Fund,		
University Houses and Lands, ...	141,638.74	4,638.36
Stock Account (part of),		
University Houses and Lands, ...	19,256.25	627.11
John Cowdin Fund,		
Real Estate in Boston, ...	22,000.00	1,975.01
Walter Hastings Fund,		
Real Estate in Cambridge, ...	20,000.00	1,880.08
Edwin Conant Bequest (part of),		
48 shares Indian Orchard Mills, ...	1.00	
COLLEGE.		
Stoughton Scholarship (part of),		
Real Estate in Dorchester, ...	1,294.30	
Pennoyer Scholarships (part of),		
Pennoyer Annuity in England, ...	4,444.44	197.49
Jonathan Phillips' Gift,		
Mortgages, ...	10,000.00	500.00
Samuel Ward's Gift,		
Ward's (Bumkin) Island, Boston Harbor, . . .	1,200.00	50.00
Scholarships of the **Class of 1856**,		
$10,000 Frem., Elkhorn & Mo. Valley R. R. 6's,	10,000.00	600.00
Amounts carried forward, . . .	$494,618.73	$19,089.15

Amounts brought forward, . .	$494,618.73	$19,089.15
LIBRARY.		
Charles Minot Fund (part of),		
$60,000 Buffalo, Bradford, & Pittsb. R. R. 7's,	60,000.00	4,200.00
Ichabod Tucker Fund (part of),		
Policy of Mass. Hospital Life Insurance Co., . .	5,000.00	200.00
Edwin Conant Fund (part of),		
Mortgage, ...	20,000.00	1,000.00
MEDICAL SCHOOL.		
Henry Willard Williams Fund,		
100 shares State Street Exchange, ...	11,000.00	450.00
37 " American Bell Telephone Co., ...	7,400.00	555.00
22 " Calumet & Hecla Mining Co., ...	6,600.00	330.00
MUSEUM OF COMPARATIVE ZOÖLOGY.		
Agassiz Memorial Fund (part of),		
Advances for new building, &c., ...	18,834.26	1,112.44
SPECIAL FUNDS.		
Bussey Trust,		
Real Estate, ...	413,092.80	24,296.04
Robert Troup Paine Fund (accumulating),		
$37,000 Massachusetts 5's (sold during year), . .		897.06
$37,000 Massachusetts 3½'s	39,157.81	643.19
Fund of the Class of 1834,		
Policy of Mass. Hospital Life Insurance Co., . .	1,000.00	40.00
Fund of the Class of 1853,		
Policy of Mass. Hospital Life Insurance Co., . .	3,725.00	145.00
George William Sawin Fund,		
14 shares Boston & Providence R. R., ...	3,563.50	140.00
Deposit in Suffolk Savings Bank, ...	121.50	2.44
Charles L. Hancock Bequest (part of),		
Mortgage, ...	33,197.00	2,064.75
Real Estate in Chelsea, ...	1,000.00	
Price Greenleaf Fund. The total amount of this Fund is $727,206.21, which is invested as follows:—		
$43,500 Consolidated R. R. of Vermont 5's, ...	38,280.00	2,175.00
12,200 Rutland R. R. 6's, ...	12,932.00	732.00
37,200 Rutland R. R. 5's, ...	34,968.00	1,860.00
1,000 Cheshire R. R. 6's, ...	1,110.00	60.00
46,500 Ogdens. & L. Champ. R. R. 6's, ...	46,500.00	2,790.00
23,800 Ogdens. & L. Champ. R. R. income 6's, . .	10,234.00	
3,000 Chicago, Burl. & Quincy R. R. 4's, ...	2,880.00	120.00
4,000 Chicago, Burl. & Northern R. R. 5's, . . .	4,000.00	200.00
23,000 Union Pacific Railway 6's, ...	25,990.00	690.00
290 shares Northern R. R. (N. H.), ...	29,290.00	3,190.00
800 " Rutland " preferred, ...	28,000.00	3,200.00
40 " Ogdens. & L. Champ. R. R., ...	680.00	
Amounts carried forward, . .	$1,358,174.60	$70,182.09

Amounts brought forward, . . .	$1,353,174.60	$70,182.09
317 shares Boston & Maine R. R., ...	48,746.21	2,219.00
360 " Boston & Lowell "	46,800.00	2,520.00
237 " Fitchburg R. R., preferred, ...	22,395.33	711.00
355 " Old Colony "	63,190.00	2,485.00
142 " Chicago, Burl. & Quincy R. R., . . .	18,946.35	710.00
20 " N.Y. Central & Hudson River " . . .	2,260.00	100.00
292 " Michigan Central " . . .	28,032.00	1,606.00
122 " Union Pacific Railway, ...	7,161.40	
52 " West End Street Railway, preferred, . .	4,330.00	208.00
$50,000 Metropolitan Tel. & Tel. Co. 1st M. 5's, . .	49,750.00	2,500.00
25,000 New England " " " " 6's, ...	25,593.75	1,500.00
50,000 Chic. Junc. R'ys & Union Stock Yards 5's, .	47,000.00	2,500.00
50,000 General Electric Co. 5's	50,062.50	2,500.00
Lawrence Manufacturing Co.'s Note, ...	30,000.00	1,462.50
Merrimack " " "	20,000.00	882.50
Cocheco " " "	25,000.00	1,071.87
Deposit with New England Trust Co., ...	3,074.67	71.29
Totals, ...	$1,845,516.81	$93,229.25

The other Funds are invested as a whole. The general investments are stated in detail on pages 22 and 23 of this report, but the usual summary statement of them, with the income thereof, is as follows: —

Investments.	Principal, August 1, 1893.	Principal, July 31, 1894.	Income.
Notes, Mortgages, &c., ...	$758,000.00	$208,000.00	$34,155.36
Railroad Bonds and Premiums, . .	2,194,987.29	2,161,941.37	95,001.94
Railroad Stock, ...	146,100.00	249,687.50	11,250.00
Sundry Bonds, ...	583,267.50	686,642.50	33,458.33
Manufacturing Stock, ...	37,322.29	37,322.29	3,800.00
Real Estate, ...	2,377,571.87	2,433,502.98	115,715.51
Brattle Street Reversion (1918), . .	1,000.00	1,000.00	
Advances to Botanic Department, . .	12,357.58	11,278.03	617.88
" " Bussey Trust, ...	37,013.76	35,291.89	1,844.71
" " Dining Hall Association,	19,732.16	18,232.16	1,183.98
" " University Lands, . . .	30,000.00	30,000.00	1,500.00
" " Observatory, ...	5,290.83	5,097.52	264.54
" " Lawn Tennis Association,	50.00		2.50
" " Sch. of Veterinary Med.,	19,019.87	21,782.79	1,141.19
Baring Brothers & Company, . . .	1,282.88	1,522.18	41.81
Term Bills due in October, ...	156,273.78	154,899.91	
Term Bills overdue, ...	2,984.36	3,967.91	
Cash in Suffolk National Bank, . . .	19,329.62	65,558.44	
Cash in National Union Bank, . . .	131,057.15	376,870.31	5,482.01
Cash in hands of Bursar, ...	7,153.32	19,154.13	
Totals of general investments,	$6,539,794.26	$6,521,751.91	$305,459.71
Totals of special investments,	1,850,749.27	1,845,516.81	93,229.25
Amounts, . . .	$8,390,543.53	$8,367,268.72	$398,688.96

The account of Advances for Railroad Bond Premiums has been credited with the sum of $19,843.00 as the fair yearly repayment from income on account of premiums advanced.

The net income of the general investments ($305,459.71) has been divided at the rate of $4\frac{84}{100}$ per cent. among the Funds to which they belong, after allowing to certain temporary Funds and balances a special rate of three per cent. The fraction, which was $113.47, has been placed as usual to the credit of the University account.

The rate of income compared with that for 1892–93 shows a loss of fifteen one hundredths of one per cent.

Owing to the necessity for repairs on Holyoke House, the unrestricted income of the University from its Funds, which share the special investment in University Houses and Lands, has for 1893–94 been much less than during the previous year.

The following table shows the income available for the departments dependent upon the College proper, and the expenditures in those departments: —

Interest on Funds for			
University Salaries and Expenses,		$32,431.67	
Library Salaries and Expenses (not books),		26,236.54	
College Salaries and Expenses,		41,686.21	
Gymnasium, and repairs on College buildings,		none.	
College Term Bills,		319,728.18	
Sundry receipts, as follows: —			
Gifts for Salaries and Expenses,	$4,875.00		
Use of buildings (not University houses and lands),	2,217.00		
Laboratory and other fees,	29,073.70		
Sales of catalogues, pamphlets, etc.,	2,345.36		
Unexpended appropriation returned,	33.50		
		38,544.56	
			$458,627.16
Expended for			
University Salaries and Expenses,		$61,786.61	
Library Salaries and Expenses (not books),		30,836.72	
College Expenses,		78,905.74	
College Salaries, for instruction,		252,961.29	
Gymnasium and Athletic Building Expenses,		10,104.49	
Repairs, insurance and cleaning on College buildings not valued on Treasurer's books,		24,550.85	
			$459,145.70
Balance, showing deficit for the year, which has been charged to Stock Account,			$518.54

While the gains and the losses of income from Funds have nearly offset one another, for the University, College, and Library accounts, taken together, there has been a considerable increase of income from more tuition-fees, with a great net reduction of expenses, excluding the item of salaries for instruction, which is larger than ever before. After adding the income of the Stock Account to its capital to make good in part former deficits, there has been a deficit for 1893–94 of only $518.54. For 1892–93, after using for current expenses the whole income of the Stock Account, the deficit was $25,181.26.

The Divinity School, having used for the first time the income of the Charles L. Hancock Fund towards the salary of the John Hancock professor, has had a surplus of $751.18, after spending more money than before for improvements. For 1892–93 there was a deficit of $2822.15.

The Law School, with less tuition-fees, has had a surplus of $11,134.77. For 1892–93 the surplus was $13,818.56.

For the Medical School, less tuition-fees and a larger outlay for salaries and other purposes, have caused a deficit of $5367.73. For 1892–93 there was a surplus of $3185.83.

The Dental School, with more tuition-fees, has had a surplus of $3465.56. For 1892–93 the surplus was $2119.47.

The Lawrence Scientific School has had many more tuition-fees, and a much larger outlay, with a deficit of $2776.78. For 1892–93 the deficit was $929.20.

The Museum of Comparative Zoölogy has spent all the income of its restricted Funds as required by the conditions of gift, and has used the surplus income of the Agassiz Memorial Fund, as heretofore, to pay interest upon, and to repay in part, the principal of the advances from the Memorial Fund, which were used to extend the Museum building and to buy fossils.

For the general account of the Observatory there has been a surplus of $193.31, the larger income from the Robert Treat Paine Fund having been mostly spent during the year. For 1892–93 there was a deficit of $1042.56. Nearly all the the income of the Boyden Fund has been used for the expedition to Peru, and the large gifts from Mrs. Draper, for current use, have been spent, as heretofore, for the special research work of the Draper Memorial.

The Bussey Institution, with more income from the Bussey property and from tuition-fees, has made its usual expenditure and had a surplus of $2837.96. For 1892–93 the surplus was $383.72.

The Veterinary School has had more income from tuition-fees, and less from its Hospital and Forge. The deficit has been $2762.92. For 1892–93 there was a nominal surplus of $138.78. Bills which should have been paid in that year have since been paid and have made the deficit for 1893–94 larger than it would otherwise have been. This year gifts for current use have made good the loss from annual subscriptions. The Veterinary School has no endowment, and its gifts for current use have been few. The financial condition of the School has never been good, and its debt to the University is now large.

Gifts have been received during the year as follows: —

GIFTS TO FORM NEW FUNDS OR INCREASE OLD ONES.

From the estate of William F. Weld, his unrestricted bequest of $100,000.

From Mrs. Rushton D. Burr, $1000.97, to found, in memory of her late husband, the Rushton Dashwood Burr Fund, of which the income only is to be spent for books for the Divinity School library.

From Samuel S. Shaw, Secretary of the Class of 1853, $100, to be added to the Fund of the Class of 1853.

From Milton Reed, $1000, to found the Fall River Scholarship, "the annual income to be given to some meritorious needy undergraduate student at the College proper, the preference to be given to some such student from the city of Fall River, Massachusetts."

From Miss Anna C. Lowell, $1000 additional, for the Lowell Fund for a Botanic Garden.

From the friends and patients of the late Dr. Charles Pratt Strong, $3750, "for the purpose of founding a scholarship in the Medical School in his memory, to be called the Charles Pratt Strong Scholarship."

From the estate of Mrs. Harriet Hayden, $5000, on account of her residuary bequest for establishing "The Lewis and Harriet Hayden Scholarship for colored students."

From the estate of Henry P. Kidder, his unrestricted bequest of $10,000.

From Edward Russell, $300, to increase the Scholarship founded by him.

From Robert N. Toppan, $3000, for the permanent endowment of the Toppan Prize in Political Science.

From the estate of Miss Caroline Haskell Ingersoll, $2500, part of her bequest of $5000, for the establishment of "The Ingersoll lecture on the Immortality of Man."

Subscriptions, amounting to $1393.13, collected mainly from graduates and undergraduates of the College, for the purpose of establishing the Frank Bolles Memorial Fund for the help of needy students.

The total amount of these gifts for capital account is $129,044.10, as is also stated on page 20 of this report.

GIFTS FOR IMMEDIATE USE.

From Mrs. Henry Draper, of New York, an additional sum of $9999.96, to be expended by the Director of the Observatory in prosecuting the researches in the photography of stella spectra, with which the late Dr. Henry Draper's name is honorably associated.

From William G. Farlow, his annual gift of $450, towards the salary of the Assistant in the Cryptogamic Herbarium.

From Charles Loring Jackson, $150, for salaries of Assistants in Chemistry.

From Miss Mary L. Ware, $100, for the Palaeontological division of the students' Geological department.

From F. C. Shattuck, $100, to aid a student in the Medical School.

From Howard C. Smith, $100, to buy books for the French department.

From the committee appointed by the Board of Overseers to visit the department of Economics, $250, for the purchase of books for the Political Economy Library.

From the Society for Promoting Theological Education, $2600, for the library of the Divinity School.

From the Dante Society, an additional gift of $100, for the purchase of books for the Dante Collection.

From Theodore K. Gibbs, $42.07, to make up the full amount of $250 for the Virginia Barret Gibbs Scholarship for 1892–93.

From James A. Garland, $1180, for the cost of a series of lectures on the Fine Arts.

From an anonymous friend, $250, towards the salary of the Professor of Entomology for the six months ending June 1, 1894, in continuance of his former gifts for the same purpose.

From the Harvard Law School Association, $1000, for a course of lectures on the "Conflict of Laws," to be given during the academic year 1893–94.

From E. S. Sheldon, $15, for books for the department library of Romance Languages.

From John Lowell, on behalf of himself and Mrs. Lowell, $400, the ninth yearly payment for the support of two Scholarships to be known as the George Emerson Lowell Scholarships.

From Milton Reed, $100, to be expended at the discretion of Professor Palmer during 1893–94, as aid to two or more deserving students.

From Mrs. Rushton Dashwood Burr, $275, as a repayment of money received by her late husband, while he was a member of the Divinity School, and $25 to be spent for books for the Divinity School.

From Charles P. Ware, an unrestricted gift of $20.

From Miss Lucy Ellis, her second yearly payment of $2000, for assistance in the departments of Physiology and Pathological Bacteriology at the Medical School.

From the Cercle Français, $25, for the library of the French department.

Subscriptions towards the expense of printing the new hymn book for Appleton Chapel, paid to August 1, 1894, from

Mrs. Matthew Bartlett	$50	Miss Anna C. Lowell	$50
J. Arthur Beebe	50	The Misses Walker	25
Emmanuel Church of Boston	100	William G. Weld	50
A friend	25	Roger Wolcott	50
Samuel Johnson	50		$450

From Moorfield Storey and James J. Putnam, $650, from the income of a trust fund held by them, for the payment of certain salaries in the Medical School.

From Mrs. C. M. Barnard, $600, her eleventh yearly payment for the Warren H. Cudworth Scholarships.

From an anonymous friend, through Professor Goodale, $2500 for the Herbarium, $2500 for the Botanic Garden, and $5000 for the Botanic Museum.

From the estate of Frederick L. Ames, $8333.34, and from John L. Gardner, $2000, for the Arnold Arboretum.

From Frederick P. Fish, $300, for the purchase of books for the library of the Law School.

From Silas Dinsmoor, $103.35, in repayment, with interest, of money advanced to him while in College from the Beneficiary Funds.

From George W. Wales, $200, for books for the Library, in continuance of former gifts for the same purpose.

From Nathaniel C. Nash, $250, to be spent by Professor John Williams White in such manner as he shall think will best advance the interests of the Greek department.

Additional subscriptions from graduates of the Dental School, to be applied towards the immediate wants of the School, paid to August 1, 1894, from

Charles H. Abbot	$25	William H. Potter	$5
C. A. Brackett	25	James Shepherd	5
E. P. Bradbury	25	Charles Wilson	20
P. B. Laskey	5		$110

Additional subscriptions for the present use of the Herbarium, paid to August 1, 1894, from

F. L. Ames (estate of),	$500	Henry Lee	$500
B. P. Cheney	500	Augustus Lowell	250
H. H. Hunnewell	500	Nathaniel C. Nash	250
Nathaniel T. Kidder	500	F. H. Peabody	50
			$3050

Additional subscriptions for the erection and endowment of "Phillips Brooks House" paid to August 1, 1894, from

Thomas H. Buttimer	$5.00	George S. Hale	$25.00
Benjamin E. Carter, Jr.	40.00	Charles E. Johnson	500.00
Henry Chauncey	50.00	E. R. Kellam	5.00
A. P. Emmons	1.00	Calvin G. Page	40.00
Charles S. Ensign, Treas.	75.50	James C. White	100.00
A friend, through Arthur Brooks	500.00		$1341.50

Through F. C. de Sumichrast, $26, for the French department library.

From Henry C. Warren, $750 additional, to be applied to the printing of Hindoo texts and of translations from the same, and to the purchase of Hindoo manuscripts.

From the estate of Frederick L. Ames, $5000, subscribed by him towards providing and equipping a new building for the Dental School.

From Augustus Hemenway and Edwin D. Morgan, $750 each, for the present use of the Veterinary School.

The total amount of these gifts for immediate use is $53,846.22, as is also stated on page 18 of this report.

EDWARD W. HOOPER, *Treasurer.*

BOSTON, December 4, 1894.

ACCOUNTS.

General Statement of Receipts and Disbursements for the year ending

INCOME.

Interest on notes, mortgages, and advances, ...		$48,148.25
" " Massachusetts 5's, ...		897.08
" " Massachusetts 3½'s, ...		643.19
" " Chicago Sanitary District 5's, ...		2,458.33
" " Metropolitan Telephone & Telegraph Co. 5's, ...		7,500.00
" " Chicago Junc. Railways & Union Stock Yards Co. 5's, .		10,000.00
" " New England Telephone & Telegraph Co. 6's, ...		7,500.00
" " General Electric Co. 5's, ...		15,000.00
" " Policies Mass. Hospital Life Insurance Co., ...		385.00
" " Deposit with Suffolk Savings Bank, ...		2.44
" " Deposit with New England Trust Co., ...		787.97
" " Deposit with National Union Bank, ...		5,482.01
" " Railroad Bonds (after deducting $19,843.00 for sinking premiums).		
Buffalo, Bradford & Pittsburg 7's, . .	$4,200.00	
Fremont, Elkhorn & Mo. Valley 6's, .	600.00	
Consolidated R. R. of Vermont 5's, .	2,175.00	
Rutland Railroad 6's, ...	732.00	
Rutland Railroad 5's, ...	1,860.00	
Cheshire Railroad 6's, ...	60.00	
Union Pacific 6's, ...	690.00	
Ogdens. & Lake Champlain 6's, . . .	2,790.00	
Chicago, Burlington & Northern 5's, .	200.00	
Chicago, Burlington & Quincy 4's, . .	120.00	
Eastern Railroad sterling 6's, ...	5,735.94	
Eastern Railroad 6's, ...	18,490.00	
Union Pacific R'y Omaha Bridge 5's, .	4,180.00	
Burlington & Mo. River in Neb. 6's, .	17,124.00	
Chicago, Burlington & Quincy 7's, . .	24,130.00	
Chicago, Burlington & Quincy conv. 5's,	4,200.00	
Fort Scott, So. E. & Memphis 7's, . .	6,966.00	
Chicago & No. W., Madison Exten. 7's,	5,310.00	
Minneapolis Union 5's, ...	4,866.00	
Great Northern Coll. Trust 4's, . . .	4,000.00	108,428.94
Dividends on Stocks.		
Amoskeag Manufacturing Co., . . .	780.00	
Merrimack " " . . .	1,020.00	
Pacific Mills, ...	2,000.00	3,800.00
Chicago, Burlington & Quincy R. R.. .	3,210.00	
Rutland R. R., preferred, ...	3,200.00	
Boston & Maine R. R., ...	2,219.00	
Old Colony R. R., ...	2,485.00	
New York Cent. & Hud. River R. R.,	8,850.00	
Michigan Central R. R., ...	1,606.00	
Boston & Lowell R. R., ...	2,520.00	
Amounts carried forward, . . .	$24,090.00	$211,033.21

by the Treasurer of Harvard College,
July 31, 1894.

EXPENSES.

Paid to account of Expenses in the

University, as per Table I. (page 42).		
Fellowships and Scholarships, ...	$13,234.75	
Prizes, ...	450.00	
Salaries and other expenses, ...	58,986.61	
Sundry payments from special Funds, . .	214,599.26	$287,270.62
College, as per Table II. (page 45).		
Salaries for instruction, ...	252,961.29	
Repairs, insurance, and cleaning on College Edifices, not valued on Treasurer's books,	24,550.85	
General expenses, ...	43,233.17	
Scholarships, ...	32,074.82	
Beneficiaries, ...	18,345.50	
Prizes, ...	872.80	
Botanic Garden and Botanic Museum, . .	12,080.39	
Herbarium, ...	6,888.56	
Hemenway Gymnasium, ...	9,495.16	
Carey Athletic Building, ...	609.33	
Jefferson Physical Laboratory, ...	4,180.93	
Books for special departments, ...	1,660.22	
Apparatus, &c., from special gifts, ...	1,600.49	
Printing, from Publication Funds, ...	1,179.10	
Summer Schools, ...	8,842.47	
Appleton Chapel, ...	7,706.95	
Appropriations for collect'ns and laborator's,	19,123.15	
Stoughton Pasture expenses, ...	4.50	445,409.68
Library, as per Table III. (page 53).		
Books, ...	15,108.00	
Salaries and other expenses, ...	30,836.72	45,944.72
Divinity School, as per Table IV. (page 55).		
Salaries and other expenses, ...	32,774.67	
Scholarships and Beneficiaries, ...	2,139.07	34,913.74
Law School, as per Table V. (page 57).		
Salaries and other expenses, ...		59,732.05
Medical School, as per Table VI. (page 57).		
Salaries, laboratory expenses, &c., . . .	85,684.95	
Scholarships and Beneficiaries, ...	3,455.00	
Fees repaid to Instructors, ...	4,345.00	
Boylston Medical Prizes, ...	250.00	
Warren Anatomical Museum, ...	746.83	
Sundry payments from special Funds, . .	2,361.95	
General expenses, ...	18,358.53	115,202.26
Amount carried forward, ...		$988,473.07

General Statement of Receipts and Disbursements
for the year ending

INCOME (*continued*).

Amounts brought forward, . . .			$24,090.00	$211,033.21
Dividends on Stocks (*continued*).				
Northern R. R. (N. H.), ...			3,190.00	
West End Street Railway, preferred, .			208.00	
Fitchburg R. R., preferred, ...			711.00	
Boston & Providence R. R., ...			140.00	28,339.00
State Street Exchange, ...			450.00	
American Bell Telephone Co., ...			555.00	
Calumet & Hecla Mining Co., ...			330.00	1,335.00
Real Estate Investments, from rents, &c., net receipts.				
Cambridge (University Houses and Lands) gross receipts,		$38,440.74		
Less Taxes, ...	$1,872.48			
Insurance, ...	3,051.76			
Repairs, improvements, care, &c. .	19,579.93	24,504.17	13,936.57	
Boston (general investments).				
Gross receipts, ...		157,834.28		
Less Taxes, ...	24,102.40			
Insurance, ...	2,900.88			
Repairs, improvements, care, &c., .	7,172.28			
Repaid to capital, .	7,943.21	42,118.77	115,715.51	
Bussey real estate.				
Gross receipts, ...		43,586.53		
Less Taxes, ...	7,998.16			
Insurance, ...	1,599.31			
Interest, ...	1,844.71			
Repairs, improvements, care, &c.. .	1,530.04			
Heat and power, . .	6,318.27	19,290.49	24,296.04	
Sundry estates (special investments).				
Gross receipts, ...		4,982.37		
Less Taxes, ...	718.80			
Repairs, ...	408.48	1,127.28	3,855.09	157,803.21
Term Bills.				
College, as per Table II., ...			$319,728.18	
Divinity School, as per Table IV., ...			6,162.67	
Law School, as per Table V., ...			52,100.00	
Medical School, as per Table VI., ...			90,509.47	
Dental School, as per Table VII., ...			8,820.00	
Lawrence Scientific School, as per Table VIII.,			41,315.00	
Bussey Institution, as per Table XI., ...			610.00	
School of Veterinary Medicine, as per Table XII.,			5,305.00	524,550.32
Amount carried forward, ...				$923,060.74

by the Treasurer of Harvard College,
July 31, 1894.

EXPENSES (*continued*).

Amount brought forward, ...		$988,473.07
Dental School, as per Table VII. (page 60).		
Salaries and other expenses, ...		12,326.99
Lawrence Scientific School, as per Table VIII. (page 60).		
Salaries and other expenses, ...		58,605.46
Museum of Comparative Zoölogy, as per Table IX. (page 61).		
Paid from sundry Funds on the order of the Faculty, ...	$23,303.26	
Sturgis Hooper Fund, Professor of Geology,	4,740.00	28,043.26
Observatory, as per Table X. (page 62), ...		53,717.58
Bussey Institution, as per Table XI. (page 63),	$13,042.09	
Arnold Arboretum, as per Table XI. (page 63),	16,529.38	29,571.47
School of Veter'y Medicine, as per Table XII. (page 64),		26,355.01
Annuities from the following Funds.		
Bemis, ...	$1,077.80	
Bussey Trust, ...	6,000.00	
Gore, ...	300.00	
Lucy Osgood, ...	420.00	
Gurney, ...	1,000.00	
George William Sawin, ...	142.44	
Henry Willard Williams, ...	1,335.00	10,275.24
Class Funds.		
Paid the Secretary of the **Class of 1834,** . . .	$40.00	
" " " " **1853,** . . .	145.00	185.00
Sundry payments from income.		
From **Gray** Fund for Engravings, to the Treasurer of the Museum of Fine Arts, ...	$1,198.25	
From **Daniel Williams** Fund for the benefit of the Herring Pond and Mashpee Indians, . . .	820.76	
From **Sarah Winslow** Fund, to the Minister and Teacher at Tyngsborough, Mass., ...	234.17	
From **Huntington Frothingham Wolcott** Fund, to the Treasurer of the **Peabody** Museum of American Archaeology and Ethnology, . . .	499.00	
From **John Witt Randall** Fund, expenses on account of the **Randall** collection, ...	839.03	
From **Bussey** Trust, expenses on account of French claims, ...	5.50	3,596.71
Total amount of expenses carried forward, ...		$1,206,149.79

General Statement of Receipts and Disbursements for the year ending

INCOME (*continued*).

Amount brought forward,			$923,060.74
Sundries.			
William Pennoyer Annuity,		$197.49	
Asa Gray's copyrights,		3,067.44	
Trustee of **Thayer** Scholarships,		3,200.00	
Matthews Scholarships (½ net rents of Hall),		4,993.83	
Trustees of **Edward Hopkins**,		223.75	
Sale of grass, wood, old material, etc.,		4,293.45	
" " old examination papers,		97.55	
" " tickets to Commencement Dinner,		780.00	
" " books, pamphlets, catalogues, &c.,		1,626.25	
Board of horses, cattle, &c. at **Bussey** Institution,		2,404.13	
Repayment of advances for microscopes,		376.25	
Unexpended appropriation returned		33.50	
Laboratory instruction to Dental and Veterinary students,		848.00	
Use of Library by resident graduates and others,		135.00	
Use of lockers at Gymnasium and Athletic Build'g,		2,958.00	
Use of Gymnasium by graduates,		30.00	
Use of Buildings (not University Houses & Lands),		3,793.67	
Subscribers to Veterinary Hospital		160.00	
Fees for admission and condition examinations,		1,462.00	
Fees in Infirmary and Laboratory, Dental School,		5,698.25	
Fees from Veterinary Hospital and Forge,		16,401.95	
Fees for use of microscopes,		234.25	
Fees for laboratory courses in **Lawrence** Scientific School,		73.75	
Fees for Summer Courses,	$11,024.50		
Other receipts from Summer Courses,	239.05	11,263.55	
Laboratory fees: Chemistry	$7,707.65		
Physics	2,987.50		
Natural History	2,165.00		
Philosophy	365.00	13,225.15	77,577.21
Sundry gifts for immediate use, see page 12,			53,846.22
Total amount of income,			$1,054,484.17

RECEIPTS EXCLUSIVE OF INCOME.

GIFTS FOR CAPITAL ACCOUNT.

Edward Russell Scholarship (additional),	$300.00	
Lowell Fund for a Botanic Garden (additional),	1,000.00	
William F. Weld Fund,	100,000.00	
Rushton Dashwood Burr Fund,	1,000.97	
Fund of the Class of 1853 (additional),	100.00	
Amounts carried forward,	$102,400.97	$1,054,484.17

by the Treasurer of Harvard College,
July 31, 1894.

Amount brought forward, ...		$1,206,149.79

INVESTMENTS AND SUNDRY PAYMENTS.

$100,000 Chicago Sanitary District 5's, ...	$103,375.00	
1,000 Massachusetts 5's (**Robert Troup Paine** Fund), ...	1,008.75	
Accrued interest on the above bonds, .	45.98	
37,000 Massachusetts 3½'s (**Robert Troup Paine** Fund), ...	39,157.81	
1000 shares New York Central & Hudson Riv. R. R.,	103,587.50	
Policy of Massachusetts Hospital Life Insurance Co. (Fund of the **Class of 1853**), ...	100.00	
Purchase of the wharf lot adjoining The Soldier's Field, Brighton, ...	2,106.30	
Deposited in Suffolk Savings Bank (**G. W. Sawin** Fund), ...	121.50	249,502.84
Improvements, &c. on Hayward Estate, ...	$51,218.39	
Part of taxes on Hayward Estate for 1894, . . .	1,904.00	
Interest charged during construction, ...	10,751.93	63,874.32
Paid Baring Brothers & Co., in account, ...	241.42	
Less commission and expenses, ...	2.12	239.30
Amount carried forward, ...		$1,519,766.25

General Statement of Receipts and Disbursements for the year ending

RECEIPTS EXCLUSIVE OF INCOME (*continued*).

Amounts brought forward,	$102,400.97	$1,054,484.17
Fall River Scholarship Fund,	1,000.00	
Charles Pratt Strong Scholarship Fund,	3,750.00	
Lewis and Harriet Hayden Scholarship Fund,	5,000,00	
Henry P. Kidder Fund,	10,000.00	
Toppan Prize Fund,	3,000.00	
Ingersoll Lecture Fund,	2,500.00	
Frank Bolles Memorial Fund,	1,393.13	129,044.10

SALES.

$37,000 Massachusetts 5's,	$37,476.65	
13,200 Burl. & Mo. R. (Neb.) R. R. 6's (paid off),	13,200.00	
1,000 Midland R. R. 6's,	1,127.25	
Sandy Valley wood lot, Dedham,	1,721.87	53,525.77

SUNDRIES.

From Dining Hall Association, to reduce debt,	$1,500.00	
From Lawn Tennis " in payment of "	50.00	
Advances to premiums on R. R. Bonds, repaid,	19,843.00	
" " accrued interest on Bonds repaid,	48.90	
" " improvements on Gray and Andrews Estates repaid,	7,943.21	
" " Mus. of Comp. Zoölogy repaid in part,	3,414.57	
Temporary deposits,	2,065.00	34,864.68
Notes and Mortgages paid off,	$826,500.00	
Less invested in notes of Manufacturing Co's,	275,000.00	551,500.00

Balance, August 1, 1893.

Cash in Suffolk National Bank,	$19,329.62	
Cash in New England Trust Co.,	3,074.67	
Cash in National Union Bank,	131,057.15	
Cash in hands of Charles F. Mason, Bursar,	7,153.32	
Term Bills due October, 1893,	156,273.78	
" " overdue,	2,984.36	319,872.90
Total,		$2,143,291.62

by the Treasurer of Harvard College,
July 31, 1894.

INVESTMENTS AND SUNDRY PAYMENTS (*continued*).

Amount brought forward $1,519,766.25

Balance, July 31, 1894.		
Cash in Suffolk National Bank, ...	**$65,558.44**	
Cash in New England Trust Co., ...	**3,074.67**	
Cash in National Union Bank, ...	**376,870.31**	
Cash in hands of Charles F. Mason, Bursar,	**19,154.13**	
Term Bills due October, 1894, ...	**154,899.91**	
" " overdue, ...	**3,967.91**	**623,525.37**
Total, ...		**$2,143,291.62**

The following Account exhibits the State of the Property, as entered upon the Treasurer's Books, July 31, 1894.

Separate Investments, as stated in detail on pages 3, 4, and 5 of this report, consisting of		
Mortgages and Notes,	**$138,197.00**	
Railroad Bonds,	**246,894.00**	
Sundry Bonds,	**211,564.06**	
Railroad Stocks,	**303,394.79**	
Sundry Stocks,	**25,001.00**	
University Houses and Lands,	**425,678.99**	
Other Real Estate,	**458,587.10**	
Sundries,	**36,199.87**	
Amounting to		**$1,845,516.81**

And "General Investments" as follows: —

Mortgages and Notes.		
Mortgages,	**$8,000.00**	
Cocheco Manufacturing Co.'s Note,	**50,000.00**	
Lawrence Manufacturing Co.'s Note,	**70,000.00**	
Merrimack Manufacturing Co.'s Note,	**30,000.00**	
Pacific Mills' Note,	**50,000.00**	**208,000.00**

Railroad Bonds.		
$289,000 Burl. & Mo. R. in Nebr. non ex. 6's,	**$289,000.00**	
104,000 Ft. Scott, So. E. & Mem., 1st M. 7's,	**104,000.00**	
393,000 Eastern, 1st Mortg. 6's,	**393,000.00**	
£19,600 Eastern, " " " Sterling,	**95,383.40**	
500,000 Chicago, Burl. & Quincy Consol. 7's,	**500,000.00**	
100,000 Chicago, Burl. & Quincy Conv. 5's,	**100,000.00**	
175,000 U. P. Omaha Bridge Renewal 5's,	**175,000.00**	
100,000 Chic. & No. W. Madison Ex. 1st M. 7's,	**100,000.00**	
100,000 Minneapolis Union 1st M. 5's,	**100,000.00**	
100,000 Great Northern Coll. Trust 4's,	**90,501.00**	
Railroad Bond Premiums,	**215,056.97**	**2,161,941.37**

Sundry Bonds.		
$100,000 Metropolitan Tel. & Tel. Co. 1st M. 5's,	**$99,500.00**	
100,000 New England " " " " 6's,	**102,375.00**	
150,000 Chicago Junct. Railways and Union Stock Yards Coll. Trust 5's,	**143,905.00**	
250,000 General Electric Co. 5's,	**237,487.50**	
100,000 Chicago Sanitary District 5's,	**103,375.00**	**686,642.50**
Amount carried forward,		**$4,902,100.68**

Amount brought forward, ...		$4,902.100.68
Sundry Stocks.		
12 shares Amoskeag Manufacturing Co., . . .	$3,654.00	
17 " Merrimack " " . .	17,000.00	
20 " Pacific Mills, ...	16,668.29	
500 " Chicago, Burl. & Quincy R. R., . .	45,000.00	
2000 " N. Y. Central & Hud. River R. R., .	204,687.50	287,009.79
Real Estate.		
Amory Estate, Franklin Street, Boston, . . .	$165,615.81	
Webb Estate, Washington Street, Boston, . .	164,604.79	
Gray and Andrews Estates, Washington Street, Boston, ...	788,576.91	
Cole Estate, Washington Street, Boston, . . .	250,000.00	
Lowell Estate, Washington Street, Boston, . .	464,368.91	
Hayward Estate, Washington Street, Boston, .	570,860.47	
Townsend Estate, Hawkins Street, Boston, . .	29,476.09	
Reversion of Buildings in Brattle Street, Boston,	1,000.00	2,434.502.98
Sundries.		
Advances to Dining Hall Association, ...	$18,232.16	
" " Bussey Trust, ...	35,291.89	
" " School of Veterinary Medicine, .	21,782.79	
" " Observatory, ...	5,097.52	
" " University Lands, ...	30,000.00	
" " Botanic Department	11,278.03	
Baring Brothers & Co., ...	1,522.18	
Term bills due October, 1894, ...	154,899.91	
" " overdue, ...	3,967.91	282,072.39
Cash in Suffolk National Bank, ...	$65,558.44	
" " National Union Bank, ...	376,870.31	
" " hands of Charles F. Mason, Bursar, . . .	19,154.13	461,582.88
Total, ...		$8,367,268.72

The foregoing Property represents the following Funds and Balances, and is answerable for the same.

Principal, Aug. 1, 1893.	UNIVERSITY FUNDS.	Principal, July 31, 1894.
$93,830.23	**Stock Account (so called),**	$97,553.31
141,638.74	**Ins. and Guaranty F'd (so called),**	141,638.74
15,750.00	**Israel Munson Fund,**	15,750.00
16,871.63	**Leonard Jarvis Fund,**	16,871.63
25,000.00	**John C. Gray Fund,**	25,000.00
115,966.56	**George B. Dorr Fund,**	115,966.56
5,000.00	**Seth Turner Fund,**	5,000.00
113,817.44	**Francis E. Parker Fund,**	113,817.44
30,000.00	**William Perkins Fund,**	30,000.00
25,370.03	**John L. Russell Fund,**	25,370.03
5,000.00	**Stanton Blake Fund,**	5,000.00
20,000.00	**Walter Hastings Fund,**	20,000.00
4,771.33	**Charlotte F. Blanchard Fund**	4,771.33
10,000.00	**Joseph Lee Fund,**	10,000.00
	William F. Weld Fund,	100,000.00
	Henry P. Kidder Fund,	10,000.00
48,458.50	**George Draper Fund,**	48,458.50
63,648.65	President's Fund,	63,729.26
154.81	**Thomas Cotton Fund,**	154.58
5,250.00	**Samuel D. Bradford Fund,**	5,250.00
280,165.54	Retiring Allowance Fund,	292,975.57
22,000.00	**John Cowdin Fund,**	22,000.00
105,719.12	**William Hayes Fogg** Endowment,	110,835.91
112,260.11	**William Hayes Fogg** Construc'n,	78,717.19
100,098.37	**Edwin Conant** Bequest,	29,059.96
150,275.00	**Catharine Page Perkins** Bequest,	51,694.54
6,021.79	Gifts for **Phillips Brooks** House	7,667.33
56,447.38	**John Parker** Fellowships,	56,554.41
11,601.64	**Robert Treat Paine** Fellowship,	11,413.18
10,772.28	**Harris** Fellowship,	11,043.64
11,145.25	**John Thornton Kirkland** Fellows'p,	11,134.67
11,276.37	**James Walker** Fellowship,	11,237.38
32,097.09	**Rogers** Fellowships,	32,150.58
10,918.07	**Henry Lee** Memorial Fellowship,	10,996.50
10,170.69	**Ozias Goodwin** Memorial Fellows'p,	10,437.97
10,395.69	**H. B. Rogers** Memorial Fellowship,	10,898.86
81,873.23	**Henry T. Morgan** Fund,	81,950.54
11,399.87	**John Tyndall** Scholarship,	11,251.63
	Frank Bolles Memorial Fund,	1,398.70
6,835.64	**George B. Sohier Prize Fund,**	6,636.53
2,466.50	**Sumner Prize Fund,**	2,485.90
2,325.47	**John O. Sargent Prize Fund,**	2,338.00
$1,786,793.02	**. . . Amounts carried forward,**	**$1,719,210.37**

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$1,786,793.02	. . . Amounts brought forward, .	$1,719,210.37	
150.00	**Robert N. Toppan** Prize Fund, .	3,162.10	
1,006.24	**James Gordon Bennett** Prize Fund	1,054.93	
200.00	**Robert Treat Paine** Prizes . . .	200.00	
150.00	Dante Prizes, ...	150.00	
7,504.59	Lectures on Political Economy Fund,	7,867.83	
	Ingersoll Lecture Fund, ...	2,510.07	
2,342.12	Gifts for Semitic Collection, . . .	964.04	
451.47	“ “ “ Library, ...	209.85	$1,735,329.19

COLLEGE FUNDS.

27,748.64	**Alford** Professorship, ...	27,748.64	
28,337.40	**Boylston** “	28,337.40	
21,619.50	**Eliot** “	21,619.50	
10,000.00	**Eliot** “ (**Jon. Phillips's** gift)	10,000.00	
3,500.01	**Erving** “	3,500.01	
35,990.99	**Fisher** “	35,990.99	
20,217.08	**Hersey** “	20,217.08	
21,744.18	**Hersey** “ (**Thomas Lee's** gift),	21,744.18	
3,747.33	**Hollis** “ (Mathematics), . .	3,747.33	
34,517.60	**Hollis** “ (Divinity), . . .	34,517.60	
43,062.93	**McLean** “	43,062.93	
21,000.00	**Perkins** “	21,000.00	
25,020.19	**Plummer** “	25,020.19	
52,500.00	**Pope** “	52,500.00	
56,441.25	**Rumford** “	56,441.25	
23,139.83	**Smith** “	23,139.83	
192,498.89	**Gurney** Fund, ...	192,815.84	
16,240.38	Fund for Permanent Tutors, . . .	16,240.38	
15,796.97	**Lee** Fund for Reading, ...	15,796.97	
145,000.00	Class Subscription Fund, . . .	145,000.00	
2,981.72	**Paul Dudley** Fund for Lectures, .	3,026.05	
31,500.00	**Jonathan Phillips** F'd (unrestricted),	31,500.00	
1,050.00	**John A. Blanchard** “ “	1,050.00	
5,944.04	**John W. P. Abbot** “ “	6,231.73	
13,488.76	**Daniel H. Peirce** “ “	13,554.05	
6,230.00	**Daniel Austin** “ “	6,230.00	
1,305.35	Schol. & Benef. money ret. (balance),	1,408.70	
344.09	**Henry Flynt's** Bequest, ...	343.60	
3,481.43	**Abbot** Scholarship, ...	3,549.91	
1,255.88	**Alford** “	1,316.67	
5,369.90	**Bartlett** “	5,379.81	
5,700.37	**Bassett** “	5,736.25	
12,152.08	**Bigelow** “	12,240.24	
111,293.17	**Bowditch** “	111,513.07	
1,045.16	**Bright** “ (balance), . . .	1,188.50	
$2,799,862.56	. . . Amounts carried forward, .	$1,002,708.70	$1,735,329.19

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$2,799,862.56	. . . Amounts brought forward.	$1,002,708.70	$1,735,829.19
3,596.85	Browne Scholarship, ...	3,620.94	
6,191.44	Ruluff S. Choate Scholarship, . .	6,191.08	
7,618.04	Class of 1802 Scholarship, . . .	7,686.75	
3,038.79	" 1814 "	3,019.22	
5,810.21	" 1815 " (Kirkland),	5,891.41	
4,124.94	" 1817 "	4,124.59	
3,387.27	" 1828 "	3,401.20	
4,199.76	" 1835 "	4,403.04	
4,189.56	" 1841 "	4,125.70	
4,805.88	" 1852 " (Dana), . .	4,905.15	
10,000.00	" 1856 "	10,000.00	
3,410 14	" 1867 "	3,475.18	
10,773.48	Crowninshield "	10,961.50	
600.00	W. H. Cudworth " (balance),	800.00	
5,477.60	George & Martha Derby Scholar'p,	5,492.74	
2,099.80	Julius Dexter Scholarship, . . .	2,201.44	
5,520.73	W. S. Eliot " . . .	5,454.61	
	Fall River " . . .	1,016.12	
5,929.67	Farrar " . . .	5,966.68	
10,418.38	Richard Augustine Gambrill Sch.	10,522.61	
6,018.74	Charles Haven Goodwin Sch. . .	6,004.82	
3,721.64	Greene Scholarship, ...	3,901.78	
200.00	Price Greenleaf Sch. (balance),	300.00	
5,954.04	Levina Hoar Scholarship, ...	5,992.21	
10,718.75	Hodges "	11,037.55	
5,569.16	Hollis "	5,638.70	
	George E. Lowell " (balance),	66.66	
5,356.34	Matthews " "	5,250.17	
5,362.24	Merrick "	5,421.76	
7,784.47	Morey "	7,643.08	
5,249.50	Lady Mowlson "	5,370.26	
6,653.61	Pennoyer "	6,708.02	
3,767.18	Perkins "	3,949.50	
1,004.87	Rodger "	1,053.51	
3,400.54	Henry B. Rogers "	3,415.15	
4,044.35	Edward Russell " . . .	4,554.60	
5,086.24	Sales "	5,159.45	
4,178.45	Saltonstall "	4,280.67	
6,719.25	Mary Saltonstall "	6,844.45	
3,281.98	Sever Scholarship, ...	3,240.83	
10,068.87	Sewall "	10,156.21	
47,392.52	Shattuck "	47,586.34	
5,786.23	Slade "	5,816.27	
3,882.78	Story "	4,070.72	
2,651.78	Stoughton "	2,712.91	
4,125.51	Gorham Thomas Scholarship, . .	4,058.55	
7,137.16	Toppan " . .	7,182.59	
$3,076,160.20	. . . Amounts carried forward, .	$1,283,385.42	$1,735,829.19

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$3,076,160.20	. . . Amounts brought forward,	$1,283,385.42	$1,735,829.19
24,833.51	**Townsend** Scholarship,	25,035.48	
4,142.85	**Walcott** "	4,143.37	
10,473.37	**Whiting** "	10,580.26	
10,374.05	**Henry B. Humphrey** Fund,	10,376.15	
9,845.81	Exhibitions,	9,897.36	
1,905.64	**Palfrey** Exhibition,	1,917.89	
1,200.00	**Samuel Ward** Fund,	1,200.00	
1,849.11	**John Glover** "	1,938.60	
11,019.71	**Quincy Tufts** "	11,079.33	
5,386.31	**Day** "	5,417.04	
10,405.55	**Munroe** "	10,461.73	
4,624.71	**Price Greenleaf** Aid (balance),	5,617.46	
3,970.94	**Boylston** Prizes for Elocution,	4,028.14	
13,467.86	**Bowdoin** Prizes for Dissertations,	13,644.71	
1,038.28	**Sales** Prize,	1,038.28	
1,355.98	**Hopkins** Gift for "Deturs" (balance),	1,427.56	
766.82	**Chauncey Wright** Fund,	801.90	
50,000.00	**Increase S. Wheeler** Fund,	50,000.00	
1,033.57	Fund for Religious Services,	1,033.57	
15,403.41	**John E. Thayer** Fund,	15,073.82	
6,420.17	Classical Publ. F'd of **Class of 1856**,	6,730.90	
39,780.00	Botanic Department Fund,	39,780.00	
59,882.31	**Lowell** Fund for a Botanic Garden,	60,882.31	
31,749.14	Herbarium Fund,	35,153.66	
75,000.00	Physical Laboratory Endowment,	75,000.00	
11,140.83	**Henry Warren Torrey** Fund,	11,680.05	
8,364.89	**Joseph Lovering** "	8,328.10	
5,545.96	**Cyrus M. Warren** "	5,814.39	
1,974.81	**Jefferson** Physical Lab'y (balance),	1,519.47	
1,890.28	Sundry Gifts (unexpended balances),	1,220.48	
505.38	Gifts for Psychol. Lab'y and Lib'y "		
1,139.42	" " Classical Library "	596.09	
433.59	" " Historical " "	107.03	
1,224.25	" " Geological Department "	1,260.97	
1,875.12	" " Sanskrit "	2,576.01	
2,375.00	" " College Salaries,		1,718,747.53

LIBRARY FUNDS.

100,000.00	**Eben Wright** Fund,	100,000.00	
26,094.34	**Constantius** Fund,	25,938.92	
500.00	**Jarvis** Fund,	500.00	
11,925.34	**Daniel Treadwell** Fund,	11,925.34	
10,554.45	Subscription for Library,	10,519.50	
2,140.51	**Bowditch** Fund,	2,146.60	
$3,659,768.47	. . . Amounts carried forward,	$151,030.36	$3,454,076.72

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$3,659,768.47	. . . Amounts brought forward, .	$151,030.36	$3,454,076.72
122.50	**Bright** Fund (balance), ...	195.28	
27,727.47	**Edwin Conant** Fund, ...	27,767.11	
5,341.60	**Denny** "	5,278.33	
5,346.38	**Farrar** "	5,346.53	
3,161.78	**Haven** "	3,194.57	
10,093.01	**Hayes** "	10,033.33	
5,271.28	**Hayward** "	5,262.70	
2,407.17	**Hollis** "	2,381.48	
2,134.49	**Homer** "	2,175.25	
5,331.03	**Lane** "	5,279.59	
23,492.09	**Lowell** "	23,643.17	
60,032.36	**Minot** "	61,364.44	
7,181.14	**Lucy Osgood** "	7,105.72	
7,078.35	**Mary Osgood** "	6,999.37	
3,930.15	**Sales** "	3,957.26	
5,505.97	**Salisbury** "	5,404.28	
20,168.01	**Sever** "	20,186.13	
3,981.61	**Shapleigh** "	3,953.99	
37,530.57	**Sumner** "	37,787.30	
5,002.63	**Tucker** "	5,005.37	
5,300.62	**Ward** "	5,268.12	
15,880.36	**Walker** "	15,836.29	
345.67	**Wales** Gift (balance), ...	314.23	
596.83	**Waterston** " "	625.72	
10,049.99	**J. Huntington Wolcott** Fund, . . .	10,254.31	
171.05	Sundry gifts, etc. (unexpended balances),	243.80	
13,684.02	Gifts for Book Stacks, ...	14,104,54	439,993.57

DIVINITY SCHOOL FUNDS.

26,360.41	Divinity School (balance), . . .	27,111.59	
37,583.74	**Bussey** Professorship, ...	37,583.74	
16,015.81	**Parkman** "	16,015.81	
6,008.43	**Hancock** "	6,008.43	
49,845.73	**Winn** Prof. of Ecclesiastical History,	50,845.73	
32,236.82	**Frothingham** Professorship . . .	33,797.09	
20,280.38	**Dexter** Lectureship, ...	20,280.38	
9,184.69	**Henry Lienow** Fund, ...	9,184.69	
5,250.00	**Mary P. Townsend** "	5,250.00	
2,100.00	**Winthrop Ward** "	2,100.00	
1,050.00	**Samuel Hoar** "	1,050.00	
1,050.00	**Abraham W. Fuller** Fund, . . .	1,050.00	
1,050.00	**Caroline Merriam** " . . .	1,050.00	
7,875.00	**Joseph Baker** " . . .	7,875.00	
40,000.00	**Th. Tileston of New York** Endowm't,	40,000.00	
$4,202,527.61	. . . Amounts carried forward, .	$258,702.46	$3,894,070.29

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$4,202,527.61	. . . Amounts brought forward,	$258,702.46	$3,894,070.29
10,000.00	Henry P. Kidder Fund, ...	10,000.00	
17,000.00	Oliver Ames Fund, ...	17,000.00	
1,000.00	Abby Crocker Richmond Fund, .	1,000.00	
71,427.02	New Endowment, ...	71,427.02	
500.00	Louisa J. Hall Fund, ...	518.57	
1,000.00	John L. Russell Fund, ...	1,000.00	
1,504.49	John W. Quinby Fund, . . .	1,577.28	
10,000.00	William B. Spooner “ . . .	10,000.00	
5,000.00	Edwin Conant “ . . .	5,000.00	
911.34	Lewis Gould “ . . .	911.34	
2,177.95	Joshua Clapp “ . . .	2,177.95	
525.00	Hannah C. Andrews “ . . .	525.00	
1,000.00	Adams Ayer “ . . .	1,000.00	
890.00	Daniel Austin “ . . .	890.00	
	Rushton Dashwood Burr Fund, .	1,004.52	
14,309.77	Jackson Foundation, ...	14,309.03	
5,208.93	Thomas Cary Scholarships, . .	5,301.05	
2,517.78	George Chapman “ . .	2,539.65	
4,195.28	Joshua Clapp “ . .	4,218.32	
4,848.12	J. Henry Kendall “ . .	4,882.76	
3,289.20	Nancy Kendall “ . .	3,308.39	
13,079.30	Abner W. Buttrick Fund, . . .	13,098.98	
1,050.00	William Pomroy “ . . .	1,050.00	
2,915.71	Beneficiary money returned, . . .	3,339.06	434,781.38

LAW SCHOOL FUNDS.

76,801.20	Law School (balance), ...	87,435.97	
15,750.00	Dane Professorship, ...	15,750.00	
23,979.82	Bussey “	23,979.82	
8,340.81	Royall “	8,340.81	
94,994.97	Weld “	94,994.97	
53,382.40	Bemis “ . . .	54,836.16	
47,021.25	Law School Book Fund, ...	47,021.25	
160.00	Scholarship money returned, . . .	160.00	332,518.98

LAWRENCE SCIENTIFIC SCHOOL FUNDS.

3,159.20	Lawrence Scientific School (balance),	5,382.42	
40,805.73	Professorship of Engineering, . .	40,805.73	
61,536.43	Abbott Lawrence Fund, ...	61,536.43	
50,375.00	James Lawrence “	50,375.00	
30,686.85	John B. Barringer “	30,686.85	
5,556.90	George A. Gardner “	5,666.33	194,452.76
$4,893,928.06	. . . Amounts carried forward, .		$4,855,823.41

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$4,893,928.06	. . . **Amounts brought forward,**		$4,855,825.41

MUSEUM OF COMPARATIVE ZOÖLOGY FUNDS.

50,000.00	**Gray Fund for Zoölogical Museum,**	$50,000.00	
297,933.10	**Agassiz Memorial Fund,** } . .	297,933.10	
7,594.01	Teachers' and **Pupils'** " } . .	7,594.01	
117,469.34	**Permanent Fund,**	117,469.34	
7,740.66	**Humboldt** "	7,740.66	
4,957.93	**Virginia Barret Gibbs** Scholarship,	5,239.97	
100,240.00	**Sturgis Hooper Fund,**	100,340.00	586,317.08

MEDICAL SCHOOL FUNDS.

89,061.85	Medical School (balance), ...	83,694.12	
19,192.65	**Jackson** Medical **Fund,**	19,192.65	
17,129.20	**Geo. C. Shattuck** "	17,129.20	
13,686.15	**Warren Fund for Anatom'l** Museum,	13,601.72	
3,471.55	**Boylston Fund** for Medical Prizes,	3,389.59	
3,967.58	**Boylston** " " " Books,	4,159.63	
1,602.36	Medical Library Fund, ...	1,171.24	
2,000.00	**Quincy Tufts** Medical Fund, . .	2,000.00	
25,512.68	**Edward M. Barringer** " . .	25,512.68	
15,765.11	**Mary W. Swett** Fund, ...	15,765.11	
20,000.00	**Samuel W. Swett** "	20,000.00	
1,836.08	**Samuel E. Fitz** "	1,836.08	
6,505.52	**J. Ingersoll Bowditch** Fund, . .	6,416.22	
25,000.00	**Henry Willard Williams** Fund, .	25,000.00	
38,750.00	New Subscription Fund, ...	38,750.00	
3.69	**John Foster** Income for Medical Students (balance), ...	157.21	
5,896.45	**D. W. Cheever** Scholarship, . .	5.457.62	
6,000.00	**C. M. Jones** " . .	6,040.40	
6,020.41	**Isaac Sweetser** " . .	6,061.78	
	Charles Pratt Strong Scholarship,	3,802.95	
	Lewis and Harriet Hayden "	5,060.50	
5,365.89	**Geo. Cheyne Shattuck** Memorial Fellowship, ...	5,400.60	
5,132.45	**John Ware** Memorial Fellowship,	5,155.84	
5,357.45	**Chas. Eliot Ware** " "	5,391.78	
3,149.27	**Ellis Gifts** (balance), ...	3,761.62	323,906.49

DENTAL SCHOOL FUNDS.

8,801.44	Dental School (balance), ...	12,267.00	
15,255.85	Dental School Endowment, . . .	15,255.85	
6,427.63	Gifts for Building, ...	11,620.45	39,143.30
$5,830,254.36	. . . **Amounts carried forward,** . .		$5,805,192.28

Principal, Aug. 1, 1893.		Principal, July 31, 1894.	
$5,830,254.36	. . . Amounts brought forward,		$5,805,192.28

OBSERVATORY FUNDS.

110,293.88	**Edward B. Phillips** Fund, . .	$110,293.88	
21,000.00	**James Hayward** " . . .	21,000.00	
29,702.92	**David Sears** " . . .	30,421.74	
11,058.73	**Josiah Quincy** " . . .	10,507.65	
2,000.00	**Charlotte Harris** " . . .	2,000.00	
5,000.00	**Thomas G. Appleton** " . . .	5,000.00	
13,380.00	**Augustus Story** Fund, ...	13,380.00	
50,000.00	Observatory Endowment, ...	50,000.00	
273,557.86	**Robert Treat Paine** Fund, . .	273,557.86	
50,000.00	**Paine** Professorship, ...	50,000.00	
208,013.10	**Uriah A. Boyden** Fund, ...	208,573.99	
25,267.97	**Bruce** Gift (balance), ...	21,007.37	
2,500.00	**J. Ingersoll Bowditch** Fund, . .	2,500.00	
2,016.08	**Draper Memorial** (balance), . .	1,077.97	799,320.46

OTHER FUNDS FOR SPECIAL PURPOSES.

418,092.80	**Bussey** Trust (income thereof, ½ to Bussey Institution, ¼ to Law School, and ¼ to Divinity School), . . .	418,092.80	
18,085.07	Bussey Institution (balance), . . .	15,923.08	
609.02	**Bussey** Building Fund, ...	609.02	
156,036.87	**James Arnold** "	156,414.48	
8,678.48	Arboretum Construction Gifts, . .	10,981.84	
50,000.00	**Bright** Legacy, ...	50,000.00	
41,570.11	**Robert Troup Paine** Fund, . . .	38,902.08	
42,000.00	**James Savage** Fund, ...	42,000.00	
3,171.50	**John Foster** "	3,171.50	
29,939.33	**Henry Harris** "	29,939.33	
16,794.78	**Gray** Fund for Engravings, . . .	16,370.78	
30,298.15	**John Witt Randall** Fund, . . .	30,925.54	
4,400.03	**Gospel Church** Fund, ...	4,612.99	
3,625.00	Fund of the **Class of 1856**, . . .	3,725.00	
1,000.00	" " " " " **1834**, . . .	1,000.00	
727,206.21	**Price Greenleaf** Fund, ...	727,206.21	
5,103.94	**O. W. Doe** " . . .	5,150.97	
26,941.95	**Gore** Annuity Fund, ...	27,945.94	
4,513.45	**Lucy Osgood** Annuity Fund, . .	4,311.88	
3,685.00	**Geo. William Sawin** Fund, . .	3,685.00	
10,499.00	**Huntington Frothingham Wolcott** Fund, ...	10,508.15	
72,890.47	**Charles L. Hancock** Bequest, . .	72,890.47	
70,129.83	Gains and Losses for General Investments, ...	70,129.83	
	Sundry Balances, ...	2,065.00	1,741,561.79
$8,369,315.84	. . . Amounts carried forward,		$8,346,074.53

Principal, Aug. 1, 1893.			Principal, July 31, 1894.
$8,369,315.84	. . . Amounts brought forward,		$8,346,074.53

FUNDS IN TRUST FOR PURPOSES NOT CONNECTED WITH THE COLLEGE.

Principal, Aug. 1, 1893.			Principal, July 31, 1894.
16,422.50	**Daniel Williams** Fund for the conversion of the Indians, ...	$16,396.61	
4,805.19	**Sarah Winslow** F'd, for the Minister and Teacher at Tyngsborough, Mass.,	4,797.58	21,194.19
$8,390,543.53			$8,367,268.72

Changes in the Funds during the year ending July 31, 1894.

Total amount of Funds and balances, August 1, 1893, as before stated,		**$8,390,543.53**	
Total amount of Funds and balances, July 31, 1894, as before stated,		**8,367,268.72**	
Showing a total decrease during the year of			**$23,274.81**
Which is made up as follows: —			
Decrease more than increase of Funds and balances, which appear both at the beginning and end of the year,		**$146,992.06**	
Loss from change of investment,		**4,208.35**	
Sundry balances used up,		**2,880.38**	
Decrease of Stock Account, by excess of expenditures over income in College, Library, and University accounts,		**518.54**	
		$154,599.33	
Deduct from this amount			
Gifts forming new Funds or increasing old ones,	**$129,044.10**		
Increase of Funds established during the year,	**148.76**		
Credit balances created,	**2,131.66**		
		131,324.52	
			$23,274.81

Net decrease of Funds and balances as above,	**$154,599.33**
Less increase as above,	**2,280.42**
Leaving amount of the net decrease of the Funds and balances, excluding gifts for capital account, as is also shown in the following table,	**$152,318.91**

Statement showing Changes in the Different Funds

Increase of Funds and balances which appear both at the beginning and the end of the year, being the excess of income (including gifts for immediate use) over payments towards the special objects of those Funds.

UNIVERSITY.

Stock Account (so called),	$4,241.62	
President's Fund,	80.61	
Retiring Allowance Fund,	12,810.03	
Henry T. Morgan Fund,	77.31	
John Parker Fellowships,	107.03	
Henry Lee Memorial Fellowship,	78 43	
H. B. Rogers “ “	503.17	
Ozias Goodwin “ “	267.28	
Harris Fellowship,	271.36	
Rogers “	53.49	
Lectures on Political Economy Fund,	363.24	
Wm. Hayes Fogg Endowment,	5,116.79	
Gifts for **Phillips Brooks** House,	1,645.54	
Sumner Prize Fund,	19.40	
John O. Sargent Prize Fund,	12.53	
James Gordon Bennett Prize Fund,	48.69	
Robert N. Toppan Prize Fund,	12.10	$25,708.62

COLLEGE.

Daniel H. Peirce Fund,	65.29	
Paul Dudley Fund,	44.33	
John W. P. Abbot Fund,	287.69	
Gurney Fund,	316.95	
Abbot Scholarship,	68.48	
Alford “	60.79	
Bartlett “	9.91	
Bassett “	35.88	
Bigelow “	88.16	
Bowditch “	219.90	
Bright “ (balance),	143.34	
Browne “	24.09	
Class of 1802 Scholarship,	68.71	
“ **1815** “ (**Kirkland**),	81.20	
“ **1828** “	13.93	
“ **1835** “	203.28	
“ **1852** “ (**Dana**),	99.27	
“ **1867** “	65.04	
Crowninshield “	188.07	
W. H. Cudworth “ (balance),	200.00	
George and Martha Derby Scholarship,	15.14	
Julius Dexter Scholarship,	101.64	
Farrar “	37.01	
Amounts carried forward,	$2,438.10	$25,708.62

and balances during the year ending July 31, 1894.

Decrease of Funds and balances which appear both at the beginning and the end of the year, being the excess of payments over income received (including gifts for immediate use) for the special objects of those Funds.

UNIVERSITY.

Thomas Cotton Fund, ...	.23	
William Hayes Fogg Construction, ...	33,542.92	
Edwin Conant Bequest, ...	71,038.41	
Catharine Page Perkins Bequest, ...	98,580.46	
Robert Treat Paine Fellowship, ...	188.46	
John Thornton Kirkland Fellowship, ...	10.58	
James Walker Fellowship, ...	38.99	
John Tyndall Scholarship, ...	148.24	
George B. Sohier Prize Fund, ...	199.11	
Gifts for Semitic Collection, ...	1,378.08	
“ “ “ Library, ...	241.62	$205,367.10

COLLEGE.

Henry Flynt Bequest, ...	.49	
R. S. Choate Scholarship, ...	36	
Class of 1814 “	19.57	
“ **1817** “	.35	
“ **1841** “	63.86	
W. S. Eliot “	66.12	
Charles Haven Goodwin Scholarship, ...	8.92	
Matthews Scholarship (balance), ...	106.17	
Morey “	141.39	
Sever “	41.15	
Gorham Thomas “	66.96	
John E. Thayer Fund, ...	329.59	
Joseph Lovering “	36.79	
Jefferson Physical Laboratory (balance), ...	455.34	
Sundry gifts (unexpended balances), ...	669.80	
Gifts for Classical Library, ...	543.33	
“ “ Historical “	326.56	2,876.75

LIBRARY.

Constantius Fund, ...	155.42	
Denny “	68.27	
Hayes “	59.68	
Hayward “	8.58	
Hollis “	25.69	
Lane “	51.44	
Lucy Osgood “	75.42	
Mary Osgood “	78.98	
Shapleigh “	27.62	
Salisbury “	101.69	
Amounts carried forward, ...	**$652.79**	**$208,243.85**

Statement showing Changes in the Different Funds

INCREASE.

Amounts brought forward, ...	$2,438.10	$25,708.62
R. A. Gambrill Scholarship	104.23	
Greene "	180.14	
Price Greenleaf "	100.00	
Levina Hoar "	38.17	
Hodges "	318.80	
Hollis "	69.54	
Merrick "	59.52	
Lady Mowlson "	120.76	
Pennoyer "	54.41	
Perkins "	182.32	
Rodger "	48.64	
Henry B. Rogers "	14.61	
Edward Russell "	210.25	
Sales "	79.21	
Saltonstall "	102.22	
Mary Saltonstall "	125.20	
Sewall "	87.34	
Shattuck "	193.82	
Slade "	30.04	
Story "	187.94	
Stoughton "	61.18	
Toppan "	45.43	
Townsend "	201.97	
Walcott "	.52	
Whiting "	106.89	
Henry B. Humphrey Fund, ...	2.10	
Exhibitions, ...	51.55	
John Glover Fund, ...	89.49	
Palfrey Exhibition, ...	12.25	
Scholarship and Beneficiary money returned, ...	103.35	
Quincy Tufts Fund, ...	59.62	
Day Fund, ...	30.73	
Munroe Fund, ...	56.18	
Price Greenleaf Aid (balance), ...	992.75	
Bowdoin Prizes, ...	176.85	
Boylston Prizes for Elocution, ...	57.20	
Sales Prize, ...	5.00	
Chauncey Wright Fund, ...	35.08	
Hopkins Gift for "Deturs" (balance), ...	71.58	
Classical Publication Fund of Class of 1856, ...	310.73	
Herbarium Fund, ...	3,404.52	
Henry Warren Torrey Fund, ...	539.22	
Cyrus M. Warren Fund, ...	268.48	
Gifts for Geological Department, ...	36.72	
" " Sanskrit "	700.89	12,165.49
Amount carried forward, ...		$37,874.11

and balances during the year ending July 31, 1894. (Continued.)

DECREASE.

Amounts brought forward,	$652.79	$208,243.85
Ward Fund,	32.50	
Walker "	44.07	
Wales Gift (balance),	31.44	
Subscription for Library,	34.95	795.75

DIVINITY SCHOOL.

Jackson Foundation,		.74

LAWRENCE SCIENTIFIC SCHOOL.

Balance,		2,776.78

MEDICAL SCHOOL.

Balance,	5,367.73	
Medical Library Fund,	431.12	
Warren Fund for Anatomical Museum,	84.43	
Boylston Fund for Medical Prizes,	81.96	
J. Ingersoll Bowditch Fund,	89.30	6,054.54

OBSERVATORY.

Draper Memorial (balance),	938.06	
Josiah Quincy Fund,	551.08	
Bruce Gift (balance),	4,260.60	5,749.74

OTHER FUNDS FOR SPECIAL PURPOSES.

Gray Fund for Engravings,	424.00	
Lucy Osgood Annuity Fund,	201.57	
Daniel Williams Fund,	25.89	
Sarah Winslow "	7.61	659.07
		$224,280.47
Sundry balances used up.		
Gifts for Psychological Laboratory and Library,	505.38	
" " College Salaries,	2,375.00	2,880.38
Robert Troup Paine Fund, loss from change of special investment,		4,208.35
Decrease of Stock Account by excess of expenditures over income, in College, Library, and University Accounts,		518.54
Amount carried forward,		$231,887.74

Statement showing Changes in the Different Funds

INCREASE.

Amount brought forward, ...		$37,874.11

LIBRARY.

Bowditch Fund, ...	$6.09	
Bright “ (balance), ...	72.78	
Conant “	39.64	
Farrar “	.15	
Haven “	32.79	
Homer “	40.76	
Lowell “	151.08	
Minot “	1,332.08	
Sales “	27.11	
Sever “	18.12	
Sumner “	256.73	
Tucker “	2.74	
J. Huntington Wolcott Fund, ...	204.32	
Waterston Gift (balance), ...	28.89	
Gifts for Book Stacks, ...	420.52	
Sundry Gifts, etc. (unexpended balances), ...	72.75	2,706.55

DIVINITY SCHOOL.

Balance, ...	751.18	
Frothingham Professorship.	1,560.27	
Winn Professorship, ...	500.00	
Louisa J. Hall Fund, ...	18.57	
John W. Quinby Fund, ...	72.79	
George Chapman Scholarship, ...	21.87	
Thomas Cary “	92.12	
Joshua Clapp “	23.04	
J. H. Kendall “	34.64	
Nancy Kendall “	19.19	
A. W. Buttrick Fund, ...	19.68	
Beneficiary Money Returned (balance), ...	423.35	3,536.70

LAW SCHOOL.

Balance, ...	11,134.77	
Bemis Professorship, ...	1,453.76	12,588.53

LAWRENCE SCIENTIFIC SCHOOL.

George A. Gardner Fund, ...		109.43

MUSEUM OF COMPARATIVE ZOÖLOGY.

Virginia Barret Gibbs Scholarship.	282.04	
Sturgis Hooper Fund, ...	100.00	382.04
Amount carried forward, ...		$57,197.36

and balances during the year ending July 31, 1894. (Continued.)

DECREASE.

Amount brought forward, ...	$231,887.74
Amount carried forward, ...	$231,887.74

Statement showing Changes in the Different Funds

INCREASE.

Amount brought forward,		$57,197.36
MEDICAL SCHOOL.		
Boylston Fund for Medical Books,	$192.05	
Geo. Cheyne Shattuck Memorial Fellowship,	34.71	
Charles Eliot Ware “ “	34.28	
John Ware “ “	23.39	
D. W. Cheever Scholarship,	61.17	
C. M. Jones “	40.40	
Isaac Sweetser “	41.37	
John Foster inc. for Med. Students (balance),	153.52	
Ellis Gifts (balance)	612.35	1,193.24
OBSERVATORY.		
David Sears Fund,	718.82	
Uriah A. Boyden Fund,	560.89	1,279.71
DENTAL SCHOOL.		
Balance,	3,465.56	
Gifts for Building,	5,192.82	8,658.38
FUNDS FOR SPECIAL PURPOSES.		
Bussey Institution (balance),	2,837.96	
James Arnold Fund,	377.61	
Robert Troup Paine Fund,	1,540.27	
Gospel Church Fund,	212.96	
Gore Annuity “	1,003.99	
Huntington Frothingham Wolcott Fund,	9.15	
Arboretum Construction Gifts,	2,303.36	
John Witt Randall Fund,	627.39	
O. W. Doe Scholarship Fund,	47.03	8,959.72
		$77,288.41
Increase of Funds established during the year.		
Frank Bolles Memorial Fund,	5.57	
Ingersoll Lecture Fund,	10.07	
Rushton Dashwood Burr Fund,	3.55	
Charles P. Strong Scholarship,	52.95	
L. and H. Hayden “	60.50	
Fall River “	16.12	148.76
Credit balances created.		
G. E. Lowell Scholarship (unexpended balance),	66.66	
Temporary deposits,	2,065.00	
		2,131.66
Balance, which is the net decrease of the Funds and balances for the year ending July 31, 1894, excluding gifts for capital account,		152,318.91
Total,		$231,887.74

and balances during the year ending July 31, 1894. (*Continued.*)

DECREASE.

Amount brought forward	**$231,887.74**
Total, ...	**$231,887.74**

The following tables are not found, in their present form, in the Treasurer's books. They are intended to exhibit with some detail the resources and the expenditures of each department of the University. The income of every Fund held by the University is given in these tables, and also the sum paid out for the specific object of each and every Fund, in case that sum be either less or more than the actual income of the Fund. If the object to which the income of a Fund is to be applied be a general one, — like salaries, for example,— no separate mention is made in these tables of that appropriation. That particular payment is merged with others of the same kind under the general heading. A balanced summary of these tables will be found on page 68.

Table No. I.

THE UNIVERSITY.

RECEIPTS.

Income of the unappropriated fund heretofore called the Stock Account, from special investment,	$627.11	
Interest on balance,	3,614.51	$4,241.62
Income of the following funds: —		
Insurance and Guaranty, from special investm't,		4,638.36
Joseph Lee, from special investment,		327.48
John C. Gray, from special investment,		818.69
George B. Dorr, from special investment,		3,797.65
Francis E. Parker, from special investment,		3,727.28
Israel Munson,		762.30
Leonard Jarvis,		816.60
Samuel D. Bradford,		254.10
Seth Turner,		242.00
Henry T. Morgan,		3,962.65
Henry Harris, ½ of income,		724.52
William Perkins,		1,452.00
Stanton Blake,		242.00
George Draper,		2,345.42
William F. Weld,		2,823.32
Henry P. Kidder,		80.68
John Cowdin, from special investment,		1,975.01
Walter Hastings, from special investment,		1,830.08
John L. Russell (part of),		1,131.11
Charlotte F. Blanchard,		230.92
Thomas Cotton,		7.11
President's,		3,080.61
Parker Fellowships,		2,732.03
John Thornton Kirkland Fellowship,		539.42
Harris Fellowship,		521.36
James Walker Fellowship,		545.76
Rogers Fellowships,		1,553.49
Robert Treat Paine Fellowship,		561.54
John Tyndall Scholarship,		551.76
Amount carried forward,		$46,516.87

TABLE I., CONTINUED.

RECEIPTS.

Amount brought forward,	$46,516.87	
Income of the following funds (*continued*): —		
Henry Lee Memorial Fellowship,	528.48	
Ozias Goodwin " "	492.28	
Henry Bromfield Rogers Memorial Fellowship,	503.17	
Sumner Prize,	119.40	
George B. Sohier Prize,	250.00	
John O. Sargent Prize,	112.53	
James Gordon Bennett Prize,	48.69	
Robert N. Toppan Prize,	12.10	
Retiring Allowance (accumulating),	13,560.03	
Lectures on Political Economy,	363.24	
Ingersoll Lecture,	10.07	
Frank Bolles Memorial,	5.57	
William Hayes Fogg Endowment,	5,116.79	
" " " Construction,	3,166.06	
Gifts for Semitic Collections,	35.20	
Edwin Conant Bequest,	2,329.14	
Catharine Page Perkins Bequest,	3,537.37	
Gifts for **Phillips Brooks** House,	304.04	$77,010.98
For immediate use.		
Gifts for **Phillips Brooks** House,	1,341.50	
Unrestricted Gift,	20.00	1,361.50
Balance remaining after dividing the net income among the Funds,	113.47	
For care of the **Sarah Winslow** Fund,	6.00	
Sale of Catalogues, Calendars, Directories, &c.,	776.54	
Sale of grass,	60.00	
Rent of houses in No. Harvard St., Brighton,	312.00	
Use of houses by College officers,	1,400.00	2,668.01
		$81,040.49

PAYMENTS.

Overseers' Expenses.		
Advertising, postage, &c.,	$402.20	
Printing President's Annual Report,	1,243.00	
Printing Treasurer's " "	303.00	
Printing other reports, and auditing Treasurer's accounts,	310.20	$2,258.40
Office Expenses.		
President's,	1,285.61	
Treasurer's,	1,315.42	
Bursar's,	3,862.97	
Publication Agent's,	518.49	
Supt. of Buildings' and Janitor's,	141.33	
Corporation Rooms (fuel, rent, furniture, &c.),	2,663.00	9,786.82
Amount carried forward,		$12,045.22

TABLE I., CONTINUED.

PAYMENTS.

Amount brought forward,		$12,045.22
Salaries.		
President,	$8,007.34	
Treasurer and Deputy Treasurer,	6,000.00	
Secretary and Asst. Secretary of the University,	2,500.00	
Secretary of the Board of Overseers,	200.00	
Bursar,	3,000.00	
Publication Agent,	1,500.00	
Bursar's Assistant,	1,400.00	
Clerks Treasurer's office,	3,800.00	
Superintendent of Buildings,	2,400.00	28,807.34
Memorial Hall and **Sanders** Theatre.		
Repairs, fuel, gas, &c.,	445.06	
Insurance,	1,652.62	2,097.68
General Expenses.		
Advertising,	26.95	
Labor, &c. on grounds,	4,213.27	
Subscription to Mercantile Agency,	550.00	
Watering streets, and water,	296.37	
Watchmen,	1,558.39	
Freight, diplomas, supplies, and sundries,	528.48	
Printing,	454.08	
Music, Commencement,	185.00	
Annual Catalogue and Calendar,	2,823.82	
Repairs and improvements,	490.91	
Taxes,	662.32	
Insurance,	835.00	
Stationery and Postage,	454.35	
Legal Expenses,	79.00	
World's Fair expenses,	2,878.43	16,036.37
		$58,986.61
Sundry payments from Special Funds.		
On account of construction of **Perkins** Hall,	102,117.83	
On account of construction of **Fogg** Art Museum,	36,708.98	
On account of construction of **Conant** Hall,	73,367.55	
Semitic Collection,	1,413.28	
" Books and Binding,	241.62	
Retiring Allowance Fund,	750.00	214,599.26
Fellowships and Scholarships.		
John Parker,	2,625.00	
Harris,	250.00	
John Thornton Kirkland,	550.00	
James Walker,	584.75	
Rogers,	1,500.00	
Morgan,	2,800.00	
Robert Treat Paine,	750.00	
Ozias Goodwin Memorial,	225.00	
Henry Lee Memorial,	450.00	
John Tyndall Scholarship,	700.00	
University Scholarships,	2,800.00	13,234.75
Amount carried forward,		$286,820.62

TABLE I., CONTINUED.

PAYMENTS.

Amount brought forward,		$286,820.62
Prizes.		
George B. Sohier,	250.00	
John O. Sargent,	100.00	
Charles Sumner,	100.00	450.00
		$287,270.62

TABLE NO. II.

THE COLLEGE.

RECEIPTS.

From Term Bills.		
Instruction,	$267,702.85	
Receipts from College dormitories, not included in University Houses and Lands,	52,025.83	$819,728.18
Income of Scholarship Funds.		
Abbot,	168.48	
Alford (accumulating),	60.79	
Bartlett,	259.91	
Bassett,	275.88	
Bigelow,	588.16	
Bowditch,	5,886.58	
Bright, ½ income of **Bright Legacy,**	1,210.00	
Browne,	174.09	
Ruluff Sterling Choate,	299.64	
Class of 1802,	368.71	
" **1814,**	147.09	
" **1815 (Kirkland),**	281.20	
" **1817,**	199.65	
" **1828,**	163.93	
" **1835** (accumulating),	203.28	
" **1841,**	202.80	
" **1852 (Dana),**	232.61	
" **1856,** from special investment,	600.00	
" **1867,**	165.04	
Crowninshield,	521.41	
George and **Martha Derby,**	265.14	
Julius Dexter (accumulating),	101.64	
Orlando W. Doe,	100.00	
William Samuel Eliot,	267.22	
Fall River,	16.12	
Farrar,	287.01	
Richard Augustine Gambrill,	504.23	
Charles Haven Goodwin,	291 08	
Greene (accumulating),	180.14	
Price Greenleaf,	2,900.00	
Levina Hoar, for the town of Lincoln,	288.17	
Hodges,	518.80	
Hollis,	269.54	
Henry B. Humphrey,	502.10	
Amounts carried forward,	$18,000.44	$819,728.18

TABLE II., CONTINUED.

RECEIPTS.

Amounts brought forward, ...		$18,000.44	$319,723.18
Income of Scholarship Funds (*continued*).			
William Merrick, ...		259.52	
Morey, ...		376.75	
Lady Mowlson, ...		254.10	
Pennoyer. Interest, ...	$106.92		
Annuity, ...	197.49	304.41	
Perkins (accumulating), ...		182.32	
Rodger (accumulating), ...		48.64	
Henry Bromfield Rogers, ...		164.61	
Edward Russell (accumulating), ...		210.25	
Saltonstall, ...		202.22	
Mary Saltonstall, ...		325.20	
Savage, ...		300.00	
Sales, ...		245.87	
Sever, ...		158.85	
Sewall, ...		487.34	
Shattuck, ...		2,293.82	
Slade, ...		280.04	
Story (accumulating), ...		187.94	
Stoughton (accumulating), ...		65.68	
Gorham Thomas, ...		199.70	
Toppan, ...		345.48	
Townsend.		1,201.97	
Walcott, ...		200.52	
Whiting, ...		506.89	26,802.51
Received from the Trustee of the **Thayer** Scholarships,		3,200.00	
" for the **Warren H. Cudworth** "		600.00	
" " " **George Emerson Lowell** "		400.00	
" " " **Matthews** Scholarships (½ of net rents of Hall), ...		4,998.83	9,198.83
Other Beneficiary Funds, income of.			
"Exhibitions,"		476.55	
Palfrey "Exhibition,"		92.25	
Samuel Ward, from special investment, . . .		50.00	
John Glover (accumulating), ...		89.49	
Quincy Tufts, ...		533.37	
Moses Day, ...		260.68	
Munroe, ...		503.65	
Price Greenleaf Aid, ...		17,532.08	19,538.07
Scholarship and Beneficiary Money returned by a beneficiary, ...		103.35	
Gift for present use.		100.00	203.35
Prize Funds, income of.			
Ward Nicholas Boylston Prizes for Elocution,		192.20	
James Bowdoin Prizes for Dissertations, . .		651.85	
Edward Hopkins Gift for "Deturs."			
From Trustees, ...	$223.75		
Interest on unexpended balance, .	65.63	289.38	
Sales, ...		50.00	1,183.43
Amount carried forward, ...			$376,649.37

TABLE II., CONTINUED.

RECEIPTS.

Amount brought forward,		$376,649.37
Funds for Instruction, income of,		
Alford Professorship,	$1,348.05	
Boylston "	1,371.51	
Eliot "	1,046.41	
J. Phillips' addition to **Eliot** Professorship,	500.00	
Erving Professorship,	169.40	
Fisher "	1,741.96	
Hersey " ⅜ inc. of the Fund,	587.10	
Hollis " (Mathematics),	181.35	
Hollis " (Divinity),	1,670.67	
McLean "	2,084.25	
Perkins "	1,016.40	
Plummer "	1,210.97	
Pope "	2,541.00	
Rumford "	2,781.74	
Smith "	1,119.98	
Fund for Permanent Tutors,	786.02	
Thos. Lee Fund for the Hersey Professorship,	1,052.41	
Thos. Lee " " Reading,	764.57	
Class Subscription,	7,018.00	
Henry Flynt,	15.88	
Paul Dudley Fund,	144.38	
Gifts for salaries,	2,030.00	31,127.00
Income of **Jonathan Phillips** unrestricted Fund,	1,524.60	
" " **John A. Blanchard** " "	50.82	
" " **Daniel H. Pierce** " "	652.87	
" " **J. W. P. Abbot** Fund (accumulating),	287.69	
" " **John E. Thayer** "	745.51	
" " Fund for Religious Services,	50.05	
" " **Gurney** Fund,	9,316.95	
" " Classical Publication Fund of the **Class** of 1856,	310.73	
" " **Increase Sumner Wheeler** Fund,	2,420.00	
" " **Henry Warren Torrey** Fund,	539.22	
" " The **Joseph Lovering** Fund for Physical Research,	404.87	
" " **Cyrus M. Warren** Fund,	268.43	
" " **Chauncey Wright** Fund,	37.12	16,608.86
Hemenway Gymnasium.		
For use of lockers,	2,906.00	
" " by Graduates,	30.00	2,936.00
Carey Athletic Building.		
For use of lockers,		52.00
Amount carried forward,		$427,373.23

Table II., continued.

RECEIPTS.

Amount brought forward, ...			$427,373.23
Jefferson Physical Laboratory.			
Income from Endowment, ...		$3,630.00	
Interest on unexpended balance, ...		95.59	3,725.59
Sanskrit Department.			
Additional gift from **Henry C. Warren**, . . .		750.00	
Interest on unexpended balance, ...		54.89	804.89
Geological Department.			
Interest on unexpended balance, ...		36.72	
Gift for present use, ...		100.00	136.72
Classical Library.			
Interest on unexpended balance, ...			5.94
Botanic Garden and Botanic Museum.			
Income of Botanic Department Fund, ...		1,925.35	
" " **Lowell Fund**, ...		2,910.39	
" " **John L. Russell Fund**, ...		24.20	
Rent of house, ...		700.00	
Gifts for present use, ...		7,500.00	
Sale of botanic material to **Radcliffe College**, .		100.00	13,159.94
Herbarium.			
Income of Fund, ...		1,536.65	
Gifts for present use, ...		5,550.00	
Received from **Asa Gray's** copyrights, . . .		3,067.44	
Income of **John L. Russell** Fund, ...		72.60	
Sale of duplicate books, &c., ...		36.20	
" " plants, &c., ...		30.19	10,293.08
Sundries.			
For use of rooms by College Society and Officer,		505.00	
Sale of tickets to Commencement Dinner, . . .		780.00	
" " publications, ...		607.27	
" " old examination papers, ...		97.55	
Fees for admission and condition examinations,		1,462.00	
Fees for Summer Courses, ...	$11,024.50		
Other receipts from Summer Courses,	239.05	11,263.55	
Laboratory fees received.			
Chemistry, ...	$7,707.65		
Physics, ...	2,987.50		
Natural History, ...	2,165.00		
Philosophy, ...	365.00	13,225.15	
Gifts for books for class-room libraries, &c., . .		666.00	
" " hymn books, ...		450.00	
Unexpended appropriation returned, ...		33.50	29,090.02
Total receipts, ...			$484,589.41

TABLE II., CONTINUED.

PAYMENTS.

Paid the incumbents of the following Scholarships.

Abbot,	$100.00	
Bartlett,	250.00	
Bassett,	240.00	
Bigelow,	500.00	
Bowditch,	5,166.68	
Bright,	1,066.66	
Browne,	150.00	
Ruluff Sterling Choate,	300.00	
Class of 1802,	300.00	
" 1814,	166.66	
" 1815 (Kirkland),	200.00	
" 1817,	200.00	
" 1828,	150.00	
" 1841,	266.66	
" 1852 (Dana),	133.34	
" 1856,	600.00	
" 1867,	100.00	
Crowninshield,	333.34	
Warren H. Cudworth,	400.00	
O. W. Doe,	100.00	
George and Martha Derby,	250.00	
William Samuel Eliot,	333.34	
Farrar,	250.00	
Richard Augustine Gambrill,	400.00	
Charles Haven Goodwin,	300.00	
Price Greenleaf,	2,900 00	
Levina Hoar, for the town of Lincoln,	250.00	
Hodges,	200.00	
Hollis,	200.00	
Henry B. Humphrey,	500.00	
George Emerson Lowell,	333.34	
Matthews,	5,100.00	
William Merrick,	200.00	
Morey,	518.14	
Lady Mowlson,	133.34	
Pennoyer,	250.00	
Henry Bromfield Rogers,	150.00	
Sales,	166.66	
Saltonstall,	100.00	
Mary Saltonstall,	200.00	
Savage,	300.00	
Sever,	200.00	
Sewall,	400.00	
Shattuck,	2,100.00	
Slade,	250.00	
Thayer,	3,200.00	
Gorham Thomas,	266.66	
Toppan,	300.00	
Townsend,	1,000.00	
Walcott,	200.00	
Whiting,	400.00	**$32,074.82**
Amount carried forward,		**$32,074.82**

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward, ...			$32,074.82
Paid other Beneficiaries from the following Funds.			
Exhibitions, ...		$425.00	
Palfrey exhibition, ...		80.00	
Samuel Ward, ...		50.00	
Quincy Tufts, ...		473.75	
Day, ...		229.95	
Munroe, ...		447.47	
Price Greenleaf Aid, ...		16,539.33	
Gift for present use, ...		100.00	18,345.50
Prizes.			
Boylston Prizes for Elocution, ...		135.00	
Bowdoin Prizes for Dissertations, ...		475.00	
Sales, ...		45.00	
"Deturs" from **Hopkins** Donation, ...		217.80	872.80
Hemenway Gymnasium.			
Salaries and wages, ...		6,220.00	
Janitors and cleaning, ...		1,334.22	
Fuel, water, gas, printing, and sundries, ...		1,670.81	
Repairs and improvements, ...		838.01	
Apparatus, ...		750.00	
Insurance, ...		983.15	
Photographing, ...		50.00	
		11,846.19	
Less amount received from other Departments,		2,351.03	9,495.16
Carey Athletic Building.			
Repairs and improvements, ...		51.34	
Janitors and cleaning, ...		125.00	
Fuel, water, gas, and sundries, ...		113.79	
Insurance, ...		319.20	609.33
Jefferson Physical Laboratory.			
Spent on building and fixtures, ...		204.20	
Laboratory expenses, ...	$4,576.73		
Less part paid by the College, . . .	600.00	3,976.73	4,180.93
John E. Thayer Fund.			
Expenses of Quarterly Journal of Economics, . .			1,075.10
The Joseph Lovering Fund for Physical Research.			
Paid sundry accounts, ...			441.66
Chauncey Wright Fund.			
Expenses in Mathematical Department, ...			2.04
Stoughton Scholarship Fund.			
Expenses on account of Stoughton Pasture, . . .			4.50
Sanskrit Department.			
Printing Harvard Oriental Series, &c., ...			104.00
Amount carried forward, ...			$67,205.84

TABLE II., CONTINUED.

PAYMENTS.

Amount brought forward, ...		$67,205.84
Psychological Laboratory and Library.		
Paid for apparatus, &c., ...		505.38
Salaries for instruction, ...		252,961.29
Payments for College Edifices not valued on Treasurer's books.		
Cleaning and care, ...	$13,414.43	
Insurance, ...	2,810.64	
Repairs, improvements, &c., ...	8,325.78	24,550.85
Botanic Garden and Botanic Museum.		
For salaries, labor, repairs, materials, &c., . . .	11,462.51	
Interest on advances, ...	617.88	12,080.39
Herbarium.		
For salaries, labor, repairs, materials, &c., . . .		6,888.56
Summer Schools.		
Salaries, ...	7,417.05	
Clerical services, ...	400.00	
Supplies, materials, &c., ...	468.42	
Printing, ...	229.10	
Advertising, ...	179.05	
Instruments and apparatus, ...	148.85	8,842.47
Paid from gifts for books for Political Economy Dept.,	440.15	
" " " " French "	144.98	
" " " " Mathematics "	29.62	
" " " " German "	5.82	
" " " " Social Questions,	140.00	
" " " " Classical Library,	549.27	
" " " " Historical "	326.56	
" " " " Music,	10.04	
" " " " Romance Languages,	11.74	1,658.18
" " illustrated lectures in Latin and Greek Departments, ...	303.45	
" " Geological Department, ...	100.00	
" " Greek Department, ...	250.00	653.45
Appropriations for collections and laboratories.		
Physical apparatus (Prof. Trowbridge), ...	800.00	
Mineralogy and Chemistry (Prof. Cooke), . . .	800.00	
Botany (Prof. Goodale), ...	200.00	
Botany (Prof. Farlow), ...	200.00	
Geology (Prof. Shaler), ...	300.00	
Zoölogy (Prof. Mark), ...	200.00	
Psychology (Prof. Münsterberg), ...	1,048.00	
Drawing (Asst. Prof. Moore), ...	100.00	
Amounts carried forward, ...	$3,648.00	$375,346.41

TABLE II., CONTINUED.

PAYMENTS.

Amounts brought forward,		$3,648.00	$375,346.41
Appropriations (*continued*).			
Fine Arts (Asst. Prof. Moore),		150.00	
Laboratory fees appropriated,		13,225.15	
Fuel and service in Nat. Hist. Labor's,		1,500.00	
Fuel, services, etc., in Jefferson Ph. Laboratory,		600.00	19,123.15
Appleton Chapel.			
Preaching and morning services,		2,800.00	
Organist and Choir-master,		1,500.00	
Choir,		1,250.00	
Music and binding,		240.10	
Hymn Books,		454.00	
Fuel, gas, cleaning, &c.,		1,127.70	
Services and wages,		156.75	
Furniture,		178.40	7,706.95
General Expenses.			
Admission examinations,		1,815.28	
Advertising,		134.35	
Commencement Dinner,		651.79	
Deans and Chairmen of Committees, salaries, clerical and office expenses,		10,620.93	
Fuel,		6,869.14	
Furniture,		581.66	
Freight, diplomas, and sundries,		725.83	
Gas,		2,744.50	
Music, Class-Day,		125.00	
Pews hired in Cambridge churches,		1,583.50	
Printing office, expenses,	$15,455.76		
Less amount received from other Departments,	11,553.34	3,902.42	
Printing Studies and Notes in Philology,		325.00	
Other Printing,		749.33	
Services of examiners and proctors,		3,878.01	
" " assistants to instructors,		2,789.03	
" " undergraduates,		266.59	
Assistant in Geological Library,		250.00	
Attendants in Historical Library,		413.00	
Committee on reception of Students,		40.00	
Supplies, tools, and materials,		489.10	
Part of cost of lawn tennis courts,		650.00	
Watchmen,		868.13	
Water rates,		687.73	
Laboratory assistant,		240.00	
Committee on Admission to N. E. Colleges,		119.85	
Books and binding,		242.35	
Examination of Schools,		285.25	
Stationery and postage,		1,185.40	43,233.17
Total payments,			$445,409.68

TABLE No. III.

THE LIBRARY.

RECEIPTS.

Income of the following Funds for the purchase of books.			
Subscription for Library,		$510.81	
Nathaniel I. Bowditch,		103.62	
Bright, ½ income of the **Bright Legacy,**		1,210.00	
Constantius, ½ of income,		631.48	
Edwin Conant, ¼ of income,		343.50	
Denny,		258.55	
Eliza Farrar,		258.75	
Horace A. Haven,		153.04	
Francis B. Hayes,		488.50	
George Hayward,		255.12	
Thomas Hollis,		116.50	
Sidney Homer,		103.29	
Frederick A. Lane,		258.02	
Lowell,		1,137.01	
Charles Minot, from special investment,		4,200.00	
Lucy Osgood,		347.56	
Mary Osgood,		342.58	
Francis Sales,		190.21	
Stephen Salisbury,		266.49	
Sever,		976.18	
Samuel Shapleigh,		192.73	
George B. Sohier (part of),		80.86	
Charles Sumner,		1,816.50	
Ichabod Tucker, from special investment,		200.00	
George W. Wales, gift,	$200.00		
Interest on unexpended balance,	16.75	216.75	
James Walker,		768.59	
Thomas W. Ward,		256.57	
Executors of **Robert Waterston,**			
Interest on unexpended balance,		28.89	
J. Huntington Wolcott,		486.42	
Gift from Dante Society,		100.00	
Sale of duplicates, &c.,		100.70	$16,399.17
James Savage Fund for general expenses (¾ of income),		1,299.60	
Constantius " " " ½ " "		631.47	
Edwin Conant " " " ¾ " "		1,030.49	
Daniel Treadwell " " "		577.17	
Daniel Austin " " "		301.53	
Eben Wright " " "		4,840.00	
Jarvis " " "		24.20	
Price Greenleaf " " "		17,532.08	
Fees for use of Library,		135.00	
Sale of Bulletins, &c.,		24.00	26,395.54
Gifts for Library Stack Room, interest on balance,			420.52
			$43,215.23

TABLE III., CONTINUED.

PAYMENTS.

For Books from		
Subscription Fund,	$545.76	
Bowditch "	97.53	
Bright "	1,137.22	
Conant "	303.86	
Constantius "	786.90	
Denny "	326.82	
Farrar "	258.60	
Haven "	120.25	
Hayes "	548.18	
Hayward "	263.70	
Hollis "	142.19	
Homer "	62.53	
Lane "	309.46	
Lowell "	985.93	
Minot "	2,867.92	
Lucy Osgood "	422.98	
Mary Osgood "	421.56	
Sales "	163.10	
Salisbury "	368.18	
Sever "	958.01	
Shapleigh "	220.35	
Sohier "	279.97	
Sumner "	1,559.77	
Tucker "	197.26	
Walker "	812.66	
Ward "	289.07	
J. Huntington Wolcott Fund,	282.10	
Wales Gift,	248.19	
Dante Society Gift,	66.06	
Duplicate money,	28.19	
Furness Gift,	33.70	$15,108.00
Salaries and wages,	23,818.85	
Binding,	1,095.08	
Stationery and postage,	466.78	
Fuel,	1,045.31	
Repairs and improvements,	305.76	
Freight, water, supplies, and sundries,	657.92	
Janitors and cleaning,	923.33	
Furniture,	222.69	
Bulletins, and other printing,	2,301.00	30,836.72
		$45,944.72

Table No. IV.

DIVINITY SCHOOL.

RECEIPTS.

Income of the following Funds applicable to Salaries.			
Divinity School, balance,		$1,275.82	
Benjamin Bussey Professorship,		1,819.07	
Parkman Professorship,		775.17	
John Hancock Professorship,		290.79	
Winn Professorship of Ecclesiastical History,		2,412.55	
Frothingham Professorship,		1,560.27	
Samuel Dexter,		931.55	
Henry Lienow,		444.55	
Mary P. Townsend,		254.10	
Winthrop Ward,		101.64	
Samuel Hoar,		50.82	
Abraham W. Fuller,		50.82	
Caroline Merriam,		50.82	
Joseph Baker,		381.15	
Thomas Tileston of New York Endowment,		1,936.00	
Oliver Ames,		822.80	
Henry P. Kidder,		484.00	
Abby Crocker Richmond,		48.40	
New Endowment,		3,457.07	
William B. Spooner,		484.00	
C. L. Hancock. Interest,	$1,856.62		
From special investm'ts,	2,064.75	3,921.37	$21,602.76
Income of Scholarship Funds.			
Jackson Foundation,		692.60	
Thomas Cary,		252.12	
George Chapman,		121.87	
Joshua Clapp,		203.04	
J. Henry Kendall,		234.64	
Nancy Kendall,		159.19	1,663.46
Income of other Funds.			
Joshua Clapp,		$105.42	
William Pomroy,		50.82	
Hannah C. Andrews,		25.41	
Lewis Gould,		44.09	
Daniel Austin,		43.08	
Abner W. Buttrick,		633.02	
Adams Ayer,		48.40	
John W. Quinby,		72.79	
John L. Russell,		48.40	
Edwin Conant,		242.00	
Louisa J. Hall,		24.20	
Rushton Dashwood Burr,		24.20	
Interest on **Beneficiary** money returned (**balance**),		148.35	1,510.18
Amount carried forward,			**$24,776.40**

TABLE IV., CONTINUED.

RECEIPTS.

Amount brought forward, ...		$24,776.40
Benjamin Bussey Trust (½ of net income for use of this School), ...		4,572.63
Gifts from Society for Promoting Theological Education,		2,600.00
" " Mrs. **Rushton Dashwood Burr**, ...		300.00
Sale of duplicate books, &c., ...		41.55
Term Bills.		
Instruction, ...	$3,192.67	
Receipts from Divinity Hall, ...	2,970.00	6,162.67
		$38,453.25

PAYMENTS.

Salaries for instruction, ...	$21,227.65	
Services and wages, ...	1,842.87	
Labor, repairs, and improvements, ...	4,509.55	
Cleaning and care of rooms, ...	1,416.83	
Books and binding, ...	711.92	
Printing, ...	178.95	
Insurance, ...	348.75	
Fuel, gas, and water, ...	953.45	
Diplomas, and sundries, ...	124.31	
Stationery and postage, ...	107.17	
Cataloguing, ...	894.75	
Taxes on Chelsea Real Estate, ...	33.54	
Collation, ...	85.00	
Furniture, ...	53.72	
Proportion of expenses of Gymnasium, ...	162.51	
Advertising, ...	97.42	$32,748.39
Paid the incumbents of the following Scholarships.		
Jackson Foundation, ...	693.34	
Thomas Cary, ...	160.00	
George Chapman, ...	100.00	
Joshua Clapp, ...	180.00	
Nancy Kendall, ...	140.00	
J. Henry Kendall, ...	200.00	1,473.34
Paid beneficiaries from the following Funds:		
Abner W. Buttrick, ...	613.34	
William Pomroy, ...	52.39	665.73
Paid for Books from the following Funds:		
Louisa J. Hall Fund, ...	5.63	
Rushton Dashwood Burr Fund, ...	20.65	26.28
		$34,913.74

TABLE No. V.

LAW SCHOOL.

RECEIPTS.

Income of the following Funds.		
Law School, balance,	$3,692.97	
Nathan Dane Professorship,	762.30	
Benjamin Bussey "	1,160.63	
Isaac Royall "	408.70	
Weld "	4,597.76	
Bemis "	2,531.56	
Law School Book Fund,	2,275.82	
Benjamin Bussey Trust (½ of net income for use of this School),	4,572.64	$19,997.88
Term Bills.		
Instruction,	52,100.00	
Anonymous gift for instruction in the Peculiarities of Massachusetts Law,	1,000.00	
Gift for books,	300.00	
Sale of Catalogues,	1.00	53,401.00
		$73,398.88

PAYMENTS.

Salaries for instruction,	$35,550.00	
Librarian and Assistants,	8,273.14	
Janitors, cleaning, &c.,	1,119.65	
Books and binding,	4,772.10	
Fuel,	847.42	
Gas,	891.28	
Printing,	467.79	
Scholarships,	1,650.00	
Labor, repairs, and improvements,	1,856.86	
Stationery and postage,	352.49	
Freight, diplomas, and sundries,	412.92	
Water rates,	46.50	
Furniture,	217.05	
Services of examiners and proctors,	160.02	
Proportion of expenses of Gymnasium,	1,220.47	
Advertising,	854.36	
Insurance,	1,040.00	$59,732.05

TABLE No. VI.

MEDICAL SCHOOL.

RECEIPTS.

Income of the following Funds.	
Medical School, balance,	$4,310.60
Jackson,	928.94
Warren, for Anatomical Museum,	662.40
Ward Nicholas Boylston, for Medical Prizes,	168.04
Amount carried forward,	$6,069.98

TABLE VI., CONTINUED.

RECEIPTS.

Amount brought forward, ...	$6,069.96	
Income of the following Funds (*continued*).		
Ward Nicholas Boylston, for Medical Books,	192.05	
George C. Shattuck, ...	829.04	
Hersey Professorship, ⅗ income of the fund, . .	391.40	
Medical Library Fund, ...	77.54	
Quincy Tufts, ...	96.80	
David Williams Cheever Scholarship, ...	261.17	
Isaac Sweetser Scholarship, ...	291.37	
O. W. Doe "	100.00	
C. P. Strong "	52.95	
C. M. Jones "	290.40	
Lewis and Harriet Hayden Scholarship, . . .	60.50	
George Cheyne Shattuck Memorial Fellowship,	259.71	
John Ware " "	248.39	
Charles Eliot Ware " "	259.28	
Edward M. Barringer, ...	1,234.83	
Henry Harris, ½ of income, ...	724.53	
Mary W. Swett, ...	763.03	
Samuel W. Swett, ...	968.00	
Samuel E. Fitz, ...	88.86	
J. Ingersoll Bowditch, ...	314.89	
Henry Willard Williams, from special invest.,	1,335.00	
New subscription, ...	1,875.50	
Ellis Gifts (balance), ...	61.45	
John Foster, income for Medical Students every second year, ...	153.52	$17,000.19
Gifts for present use, ...		2,750.00
Term Bills.		
Instruction, ...	84,347.51	
Graduation fees, ...	3,720.00	
In Chemical Laboratory, breakage and chemicals,	1,322.96	
In Practical Anatomy, use of material, ...	1,009.00	
Extra examination fees, ...	110.00	90,509.47
From Dental and Veterinary Schools for Laboratory instruction, ...		848.00
Repayment of advances for the purchase of microscopes,		376.25
Fees for use of microscopes, ...		234.25
Use of lecture room by Society of Medical Sciences, . .		60.00
Sale of old material, ...		11.25
		$111,789.41

PAYMENTS.

Boylston Medical Prizes.		
Prize, ...	$200.00	
Advertising, ...	50.00	$250.00
Warren Anatomical Museum.		
Insurance, ...	315.96	
Expenses and additions to collection, ...	430.87	746.83
Amount carried forward, ...		$996.83

TABLE VI., CONTINUED.

PAYMENTS.

Amount brought forward, ...			$996.83
Edward M. Barringer Scholarship No. 1, .	$280.00		
" " 2, .	200.00	$480.00	
David Williams Cheever Scholarship, ...		200.00	
Isaac Sweetser Scholarship, ...		250.00	
C. M. Jones "		250.00	
O. W. Doe "		100.00	
John Ware Memorial Fellowship, ...		225.00	
Charles Eliot Ware Memorial Fellowship, ...		225.00	
George Cheyne Shattuck Memorial Fellowship, . .		225.00	
Faculty Scholarships, ...		800.00	
Other Beneficiaries, ...		700.00	3,455.00
J. Ingersoll Bowditch F'd, Physiolog'l apparatus, &c.,			404.19
Ellis Gifts, Expenses and salary, Physiology and Pathological Bacteriology, ...			1,449.10
Books and binding, from Library Fund, ...			508.66
Chemical Laboratory, ...		1,332.56	
Physiological Laboratory, ...		400.00	
Anatomy, ...		3,200.00	
Pathological Laboratory, ...		1,000.00	
Bacteriological Laboratory, ...		1,348.00	
Obstetrics, ...		200.00	
Histology and Embryology, ...		1,150.00	
Bandaging and apparatus, ...		275.00	
Therapeutics and Hygiene, ...		150.00	
Pharmacology and Therapeutics, ...		100.00	
Microscopes, ...		231.25	
Salaries for instruction, ...		70,925.00	
Repairs and improvements, ...		5,373.14	85,684.95
Graduates courses, fees repaid to Instructors, ...		1,730.00	
Summer " " " " "		2,615.00	4,345.00
General Expenses.			
Advertising and catalogues, ...		1,002.38	
Fuel, ...		1,712.97	
Gas, ...		1,171.51	
Insurance, ...		425.00	
Printing, ...		369.05	
Services and wages, ...		3,707.60	
Stationery and postage, ...		579.53	
Water rates, ...		664.80	
Furniture, ...		497.57	
Janitors and cleaning, ...		6,215.25	
Freight, diplomas, and sundries, ...		370.16	
Supplies, tools, and material, ...		989.17	
World's Fair expenses, ...		214.70	
Collations, ...		322.23	
Instruments and apparatus, ...		116.61	18,358.53
			$115,202.26

TABLE No. VII.

DENTAL SCHOOL.

RECEIPTS.

Income of the following Funds.		
Dental School, balance,	$425.91	
Endowment,	738.39	
Gifts for new building,	192.82	$1,357.12
Term Bills, for instruction,		8,820.00
Fees from Infirmary,	$3,600.00	
" " Laboratory,	2,098.25	5,698.25
Gifts for present use,		110.00
" " new building,		5,000.00
		$20,985.37

PAYMENTS.

Advertising and catalogues,	$849.08	
Care of rooms and cleaning,	844.76	
Freight, diplomas, and sundries,	459.21	
Fuel,	320.27	
Gas,	112.80	
Supplies, &c.,	2,278.30	
Furniture,	126.90	
Repairs and improvements,	296.46	
Salaries for instruction,	5,950.00	
Stationery and postage,	166.85	
Water rates,	63.00	
Medical School, for Laboratory instruction,	390.00	
Delegate's expenses,	63.00	
Printing,	143.25	
Instruments and apparatus,	106.35	
Services and wages,	282.41	
World's Fair expenses,	100.00	
Expenses for proposed new building,	274.35	$12,826.99

TABLE No. VIII.

LAWRENCE SCIENTIFIC SCHOOL.

RECEIPTS.

Income of the following Funds.		
Lawrence Scientific School, balance,	$394.90	
Professorship of Engineering,	1,975.01	
Abbott Lawrence,	2,978.34	
James Lawrence,	2,438.15	
John B. Barringer,	1,485.25	
George A. Gardner,	268.96	
Term Bills, for instruction,	41,315.00	
Laboratory fees,	73.75	
Sales of photographs,	8.75	$50,938.11

PAYMENTS.

George A. Gardner Fund.		
Photographs &c. for Geological department,	$159.53	
Salaries for instruction,	32,487.41	
Instruments, apparatus, and casts,	2,623.00	
Books and binding,	1,050.70	
Printing,	1,314.45	
Fuel,	676.12	
Gas,	51.91	
Janitor and cleaning,	416.86	
Repairs and improvements,	2,033.56	
Scholarships,	3,450.00	
Proportion of expenses of Gymnasium,	968.05	
Furniture,	548.65	
Advertising,	546.95	
Stationery and postage,	942.68	
Services and wages,	3,404.28	
Supplies, tools, and materials,	1,256.71	
Electric power,	225.00	
Beneficiaries,	450.00	
Water,	60.75	
Insurance,	216.00	
Sundries,	404.85	
Assistants to Instructors,	68.00	
Laboratory Assistant,	250.00	$53,605.46

TABLE No. IX.

MUSEUM OF COMPARATIVE ZOÖLOGY.

RECEIPTS.

Income of the following Funds.			
Gray Fund for Zoölogical Museum,		$2,420.00	
Agassiz Memorial, Interest,	$13,343.11		
From special investment,	1,112.44	14,455.55	
Teachers and Pupils,		367.55	
Humboldt,		374.66	
Permanent Fund for Museum of Zoölogy,		5,685.50	
Virginia Barret Gibbs Scholarship,		239.97	$23,543.23
Sturgis Hooper,			4,840.00
Gift for scholarship,			42.07
			$28,425.30

PAYMENTS.

Paid on the order of the Faculty of the Museum of Comparative Zoölogy, from the following Funds.		
Gray,	$2,420.00	
Agassiz Memorial, general expenses,	11,040.98	
Agassiz Memorial, advances repaid,	3,414.57	
Teachers and Pupils,	367.55	
Humboldt,	374.66	
Permanent,	5,685.50	$23,303.26
Sturgis Hooper, Professor of Geology,		4,740.00
		$28,043.26

Table No. X.

OBSERVATORY.

RECEIPTS.

Income of the following Funds.		
Edward B. Phillips,	$5,338.23	
James Hayward,	1,016.40	
Robert Treat Paine,	13,240.21	
Paine Professorship of Practical Astronomy,	2,420.00	
Uriah A. Boyden,	10,067.83	
Augustus Story,	647.59	
David Sears,	1,437.63	
Josiah Quincy,	535.26	
James Savage (½ of net income),	433.20	
Charlotte Harris,	96.80	
Thomas G. Appleton,	242.00	
J. Ingersoll Bowditch,	121.00	
New Endowment,	2,420.00	$38,016.15
Sale of Observatory publications,	30.24	
" " grass,	20.00	50.24
Mrs. Henry Draper, gift for special research (additional),	9,999.96	
Interest on unexpended balance,	97.57	10,097.53
Miss Catherine W. Bruce's gift for a photographic telescope, interest on unexpended balance,		676.94
Use of house by College officer,		600.00
		$49,440.86

PAYMENTS.

From **Uriah A. Boyden** Fund, supplies, apparatus, services, &c.,		$9,506.94
" **Draper** Memorial, supplies, apparatus, services, &c.,		11,035.59
" **Bruce** gift for telescope,		4,937.54
" **Josiah Quincy** Fund, printing Observatory publications,		1,086.34
Salaries,	$10,650.00	
Services and wages,	7,758.03	
Cleaning and care of Observatory,	544.13	
Gas,	80.37	
Instruments and apparatus, including repairs on same,	166.42	
Repairs and improvements on buildings and grounds,	1,846.00	
Stationery, postage, and telegraphing,	636.67	
Fuel,	379.74	
Books and binding,	423.52	
Water,	46.95	
Amounts carried forward,	$22,531.83	$26,566.41

TABLE X., CONTINUED.

PAYMENTS.

Amounts brought forward, ...	$22,531.83	$26,566.41
Printing, ...	2,393.52	
Freight, chemicals, and sundries, ...	510.14	
Furniture, ...	159.57	
Interest on advances, ...	264.54	
Supplies and materials, ...	601.57	
Rent of house, ...	90.00	
Insurance, ...	600.00	27,151.17
		$53,717.58

TABLE NO. XI.

BUSSEY INSTITUTION.

RECEIPTS.

Interest on unexpended balance, ...	$633.31	
From **Bussey** Trust (½ net income), ...	9,145.27	
From **Bussey** Building Fund, ...	29.48	
Fees for instruction, ...	610.00	
Sale of wood, hay, and sundries, ...	1,221.86	
Horticultural Department, prizes, sale of flowers, plants, &c., ...	1,836.00	
Board of horses, cattle, &c., ...	2,404.18	$15,880.05

PAYMENTS.

Salaries, ...	$6,600.00	
Books, ...	92.64	
Fuel for school building, ...	113.45	
Services and wages, ...	2,547.89	
Horticultural Department, expenses, ...	2,069.64	
Repairs and improvements, ...	56.54	
Grain, farming tools, &c., ...	772.37	
Advertising, ...	115.50	
Freight, telegrams, weighing hay, &c., ...	75.06	
Printing, ...	4.00	
Insurance, ...	547.00	
World's Fair expenses, ...	48.00	$13,042.09

James Arnold Fund.

Receipts.

Income of Fund, ...	$7,552.19

Payments.

19/20 of income carried to Arnold Arboretum, ...	$7,174.58

Table XI., continued.

Arnold Arboretum.

Receipts.

Income from James Arnold Fund, ...		$7,174.58	
Sale of wood, grass, &c., ...		1,014.15	
Gifts for construction account, ...	$10,333.34		
Interest on same, ...	300.19	10,633.53	$18,822.26
Interest on deposit, ...			10.48
			$18,832.74

Payments.

Salary of Director and Assistant, ...	$3,500.00	
Expenses of Arboretum, services, labor, &c., ...	12,014.26	
Specimens and expenses for Herbarium and Museum, .	1,010.37	
Books, ...	4.75	$16.529.38

Table No. XII.

SCHOOL OF VETERINARY MEDICINE.

RECEIPTS.

Term bills, for instruction, ...	$5,065.00		
" " " graduation fees, ...	240.00	$5,305.00	
Subscribers to Veterinary Hospital, ...		160.00	
Fees from Hospital and Forge, ...		16,401.95	
Interest on deposit with New England Trust Co., . . .		8.47	
Gift for present use, ...		1,500.00	
Use of room by State of Massachusetts, ...		216.67	$23,592.09

PAYMENTS.

Salaries, ...	$7,650.00	
Services and wages, ...	7,025.95	
Instruments and apparatus, ...	94.92	
Rent, ...	1,800.00	
Hay, grain, supplies, &c., ...	5,407.97	
Printing, ...	150.30	
Stationery, postage, telephone, &c., ...	413.97	
Repairs and improvements, ...	604.08	
Fuel, ...	292.26	
Water, ...	47.00	
Gas, ...	274.88	
Freight, diplomas, and sundries, ...	296.58	
Taxes, ...	257.28	
Interest on advances, ...	1,141.19	
Advertising, ...	315.21	
Medical School, for Laboratory instruction, ...	458.00	
Furniture, ...	125.47	$26,355.01

TABLE No. XIII.

MISCELLANEOUS FUNDS.

Bussey Trust.

Receipts.

Net income from Real Estate,		$24,296.04

Payments.

Annuities,	$6,000.00	
French Claims expenses,	5.50	
One-half of the remaining income to Bussey Institution,	9,145.27	
One-quarter " " " Divinity School,	4,572.63	
" " " " " Law School,	4,572.64	$24,296.04

Price Greenleaf Fund.

Receipts.

Income of special investment,		$38,064.16

Payments.

Scholarships,	$2,900.00	
Beneficiary money transferred to College account,	17,532.08	
Balance of income for Library expenses,	17,532.08	$37,964.16

Gray Fund for Engravings.

Receipts.

Interest on Fund,	$774.25

Payments.

To the Treasurer of the Museum of Fine Arts,	$1,198.25

Daniel Williams Fund.

Receipts.

Interest on Fund,		$794.87

Payments.

Treasurer of Mashpee Indians,	$547.18	
" " Herring Pond Indians,	273.58	$820.76

TABLE XIII., CONTINUED.

Sarah Winslow Fund.

Receipts.

Interest on Fund,		$232.56

Payments.

Minister at Tyngsborough, Mass.,	$117.09	
Teacher at " "	117.08	
Commission on income credited to University,	6.00	$240.17

Class Funds.

Receipts.

Class of 1834, income of special investment,	$40.00	
" " 1853, " " " "	145.00	$185.00

Payments.

To Secretary of the Class of 1834,	$40.00	
" " " " " " 1853,	145.00	$185.00

Huntington Frothingham Wolcott Fund.

Receipts.

Interest on Fund,	$508.15

Payments.

Treasurer of the Peabody Museum of American Archaeology and Ethnology,	$499.00

John Witt Randall Fund.

Receipts.

Interest on Fund,	$1,466.42

Payments.

Salary of Curator, books, and expenses,	$839.03

TABLE XIII., CONTINUED.

Sundry Accounts.

Receipts.

Gospel Church Fund (accumulating).		
Interest on Fund, ...	$212.96	
Robert Troup Paine Fund (accumulating).		
From special investment.	1,540.27	
Gore Annuity Fund, interest, ...	1,303.99	
Lucy Osgood Annuity Fund, interest, ...	218.43	
George William Sawin Annuity Fund, income of special investments, ...	142.44	
O. W. Doe Scholarship Fund,		
Part of interest on Fund, ...	47.03	
Temporary deposits, ...	2,065.00	
Advances to School of Veterinary Medicine, from General Investments, ...	2,762.92	$8,293.04

Payments.

Gore Fund, annuity, ...	$300.00	
Lucy Osgood Fund, annuity, ...	420.00	
Henry Willard Williams Fund, annuity, ...	1,335.00	
George William Sawin Fund, annuity, ...	142.44	
Gurney Fund, annuities, ...	1,000.00	
Bemis Fund, annuity, ...	1,077.80	
Robert Troup Paine Fund, loss from change of special investment, ...	4,208.35	
Advances to Botanic Department, repaid in part, . . .	1,079.55	
Advances to Observatory, repaid in part, ...	193.31	$9,756.45

GENERAL SUMMARY OF THE TABLES.

		Receipts.	Payments.
Table I.	University,	$81,040.49	$287,270.62
Table II.	College,	484,589.41	445,409.68
Table III.	Library,	43,215.28	45,944.72
Table IV.	Divinity School,	38,453.25	34,913.74
Table V.	Law School,	73,398.38	59,732.05
Table VI.	Medical School,	111,789.41	115,202.26
Table VII.	Dental School,	20,985.37	12,326.99
Table VIII.	Lawrence Scientific School,	50,938.11	53,605.46
Table IX.	Museum of Comparative Zoölogy,	28,425.30	28,043.26
Table X.	Observatory,	49,440.86	53,717.58
Table XI.	Bussey Institution,	15,880.05	13,042.09
	James Arnold Fund,	7,552.19	7,174.58
	Arnold Arboretum,	18,832.74	16,529.38
Table XII.	School of Veterinary Medicine,	23,592.09	26,355.01
Table XIII.	Bussey Trust,	24,296.04	24,296.04
	Price Greenleaf Fund,	38,064.16	37,964.16
	Gray Fund for Engravings,	774.25	1,198.25
	Daniel Williams Fund,	794.87	820.76
	Sarah Winslow Fund,	232.56	240.17
	Class Funds,	185.00	185.00
	Huntington Frothingham Wolcott Fund,	508.15	499.00
	John Witt Randall Fund,	1,466.42	839.03
	Sundry Accounts,	8,293.04	9,756.45
		$1,122,747.37	$1,275,066.28
			1,122,747.37
	Balance,		$152,318.91

Which is the net decrease of the Funds and balances, excluding gifts for capital account, as also shown on page 38.

Certificate of the Committees of the Corporation and Overseers of Harvard College, for examining the Books and Accounts of the Treasurer entered in the Journal kept by him.

The committees appointed by the Corporation and Overseers of Harvard College to examine the books and accounts of the Treasurer for the year ending July 31, 1894, have, with the assistance of an expert chosen by them, examined and audited the Cash book covering the period from August 1, 1893, to July 31, 1894, inclusive, and have seen that all the bonds, notes, mortgages, certificates of stock, and other evidences of property, which were on hand at the beginning of said year, or have been received by him during said year, are now in his possession, or are fully accounted for by entries made therein; they have also noticed all payments, both of principal and interest, indorsed on any of said bonds or notes, and have seen that the amounts so indorsed have been duly credited to the College.

They have in like manner satisfied themselves that all the entries for moneys expended by the Treasurer, or charged in his books to the College, are well vouched; such of them as are not supported by counter entries being proved by regular vouchers and receipts.

They have also seen that all the entries for said year are duly transferred to the Ledger, and that the accounts there are rightly cast, and the balances carried forward correctly to new accounts.

(Signed,)

HENRY L. HIGGINSON, SAMUEL HOAR,	*Committee on the part of the Corporation.*
MOSES WILLIAMS, ROGER WOLCOTT, CHARLES H. PARKER, ISRAEL M. SPELMAN, JACOB C. ROGERS, FRANCIS L. HIGGINSON,	*Committee on the part of the Board of Overseers.*

BOSTON, January 4, 1895.